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Patent and Trademark Office

18747

SEARCH REQUEST FORM

Examiner # (Mandatory): 76197 Requester's Full Name: Gailene R. Grabel

Art Unit 1641 Location (Bldg/Room#): 7D16 Phone (circle) 305 306 308) 0807

Serial Number: 09/216,787 Results Format Preferred (circle): PAPER DISK E-MAIL

Title of Invention High Energy Phototerapeutic Agents

Inventors (please provide full names): Craig Dees, Timothy Scott, John Smolik, Eric Wachter

Earliest Priority Date: 12-28-98 Activate Done

Keywords (include any known synonyms registry numbers, explanation of initialisms):

Halogenated Xanthene ⇒ radiosensitizer agent
or
radiation, ionizing agent
or
image contrast agent
↓
CAT Scan
X ray

1) Rose Bengal
2) 4,5,6,7-Tetrabromoerythrosin
3) phloxine B
4) erythrosine B
5) Eosin B
+
iodine or bromine

Search Topic:

please search highlighted terms in claims.

Please write detailed statement of the search topic, and the concept of the invention. Describe as specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc., if known. You may include a copy of the abstract and the broadcast or most relevant claim(s).

please see Abstract

Thanks

$635.00

STAFF USE ONLY

PYR 04-07

Searcher: _____
Searcher Phone #: _____
Searcher Location: _____
Date Picked Up: _____
Date Completed: _____
Clerical Prep Time: _____
Terminal Time: _____
Number of Databases: _____

Type of Search

_____ N.A. Sequence
_____ A.A. Sequence
_____ Structure (#)
_____ Bibliographic
_____ Litigation1
_____ Fulltext
_____ Procurement
_____ Other

Vendors (include cost where applicable)

_____ STN
_____ Questel/Orbit
→ Lexis/Nexis
_____ WWW/Internet
_____ In-house sequence systems (list)
_____ Dialog
_____ Dr. Link
_____ Westlaw
_____ Other (specify)

075
14

PTO-1590 (2-99)

=> d his

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     (FILE 'HCAPLUS' ENTERED AT 12:52:07 ON 13 SEP 1999)
               DEL HIS Y

     FILE 'REGISTRY' ENTERED AT 13:02:35 ON 13 SEP 1999
               ACT GABEL/A
              ---------
L1             STR
L2            15 SEA FILE=REGISTRY SSS FUL L1
              ---------
               ACT GABEL2/A
              ---------
L3   (         1)SEA FILE=REGISTRY ABB=ON  "ROSE BENGAL"/CN
L4   (         1)SEA FILE=REGISTRY ABB=ON  "PHLOXINE B"/CN
L5   (         1)SEA FILE=REGISTRY ABB=ON  "ERYTHROSIN B"/CN
L6   (         2)SEA FILE=REGISTRY ABB=ON  "EOSIN B"/CN
L7             5 SEA FILE=REGISTRY ABB=ON  L3 OR L4 OR L5 OR L6
              ---------
               E XANTHENE/CN
L8             1 S E3

     FILE 'HCAPLUS' ENTERED AT 13:02:52 ON 13 SEP 1999
L9          3994 S L2 OR L7 OR ROSE BENGAL OR PHLOXINE B OR ERYTHROSIN# B OR
EOS
L10           60 S (XANTHENE# OR L8/D) (L) (BROMO? OR IODO? OR HALOGEN?)
L11         4038 S L10 OR L9
L12        47962 S PHOTOSEN? OR IONIZ? (L) RADIAT?
L13         3656 S IMAG? (L) CONTRAST?
L14         5009 S RADIOSENS?
L15          610 S L11 AND (L12 OR L13 OR L14)
L16        12047 S IONIZ? (L) RADIAT?
L17            1 S L11 AND L14
L18            0 S L11 AND L13
L19            1 S L11 AND L16
L20            0 S CAT SCA
L21            5 S CAT SCAN
L22       191022 S X RAY
L23          821 S CONTRAST MEDIUM
L24         8886 S TOMOGRAPHY
L25            1 S L11 AND L24
L26            1 S L11 AND L23
L27           12 S L11 AND L22
L28           13 S L17 OR L19 OR L25 OR L26 OR L27
L29        39297 S DELIVER?
L30           26 S L11 AND L29
L31       560715 S TISSUE# OR DISEAS? OR DISORDER?
L32          111 S L11 AND L31
L33            3 S L32 AND L29
L34        35945 S  PHOTOSEN?
L35         2784 S PHOTODYNAMIC (L) THERAP?
L36          609 S L11 AND L34
L37           16 S L11 AND L35
L38            0 S CHEMICAL PARTION?
L39            0 S L11 AND L38
L40            1 S L30 AND (MICELLE# OR NANOPART? OR LIPOSOME?)
```

covers 4,5,6,7-Tetrabromoerythrosin

L41	17	S	L40 OR L33 OR L28
L42	1944	S	PHOTOTHERAP?
L43	9	S	L42 AND L11
L44	9	S	L43 NOT L41
L45	243	S	L11 AND 8/SX,SC
L46	8	S	L37 NOT (L41 OR L44)

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=> fil reg

FILE 'REGISTRY' ENTERED AT 13:16:38 ON 13 SEP 1999
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 1999 American Chemical Society (ACS)

STRUCTURE FILE UPDATES:   11 SEP  99  HIGHEST RN 238765-67-8
DICTIONARY FILE UPDATES:  12 SEP  99  HIGHEST RN 238765-67-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 13, 1999

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

=> d que l1

L1                  STR
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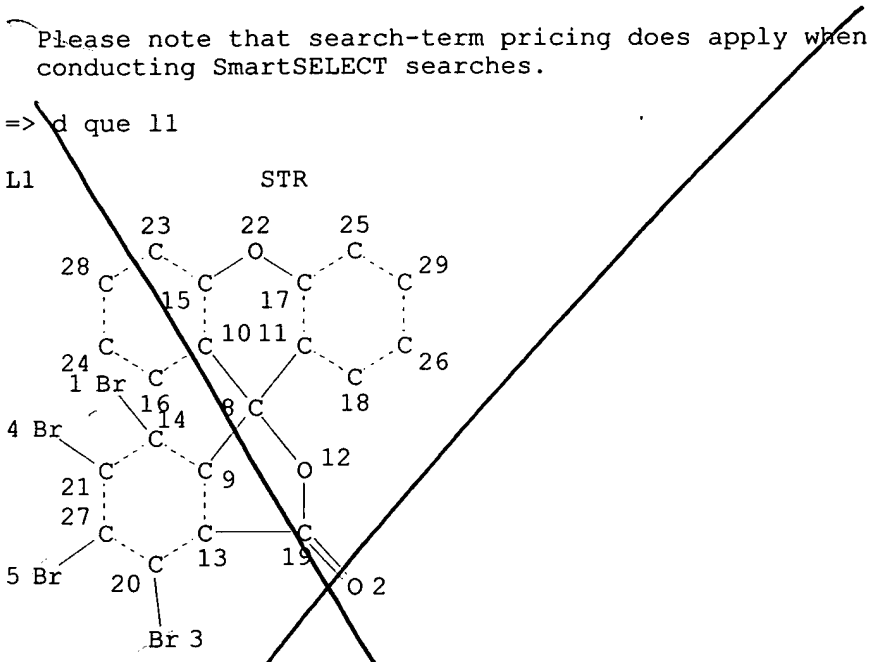


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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  27

STEREO ATTRIBUTES: NONE


=> d que stat l2

L1                  STR
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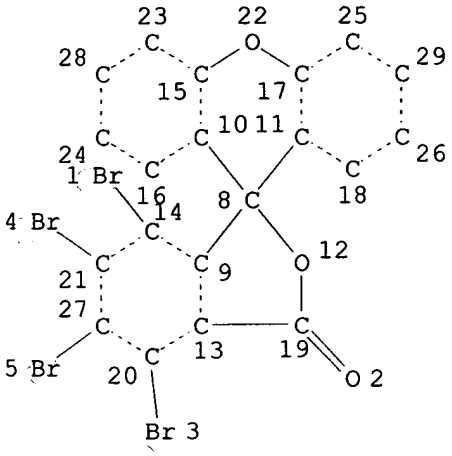


NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

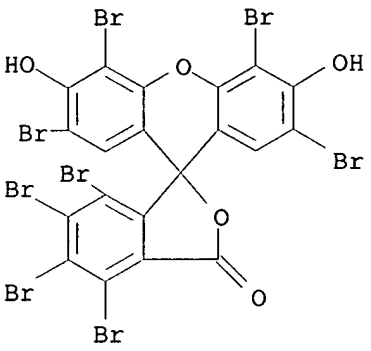
STEREO ATTRIBUTES: NONE
L2 15 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 410 ITERATIONS 15 ANSWERS
SEARCH TIME: 00.00.01

unable to find 4,5,6,7, tetrabromoerythrosin by name in Registry or CA. Searched it structurally.

=> d ide can l2 1-15

L2 ANSWER 1 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 161360-17-4 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxy-, calcium potassium sodium salt (2:1:1:1) (9CI) (CA INDEX NAME)
MF C20 H4 Br8 O5 . 1/2 Ca . 1/2 K . 1/2 Na
SR CA
LC STN Files: CA, CAPLUS
CRN (94418-47-0)



● 1/2 Na

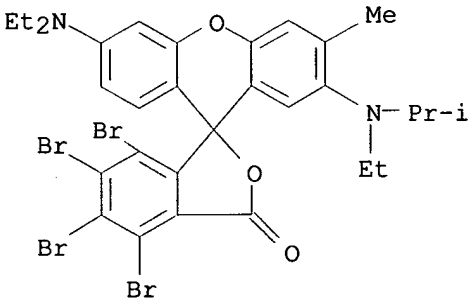
● 1/2 Ca

● 1/2 K

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 122:174298

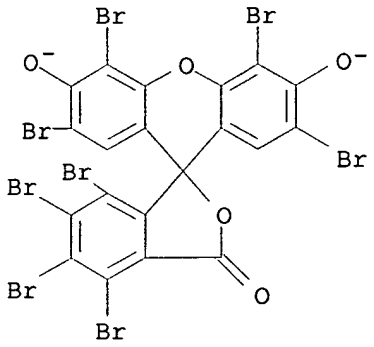
L2 ANSWER 2 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 154194-85-1 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4,5,6,7-tetrabromo-6'-(diethylamino)-2'-[ethyl(1-methylethyl)amino]-3'-methyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C30 H30 Br4 N2 O3
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 120:232170

L2 ANSWER 3 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 131362-50-0 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxy-, ion(2-) (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H2 Br8 O5
SR CA
LC STN Files: CA, CAPLUS

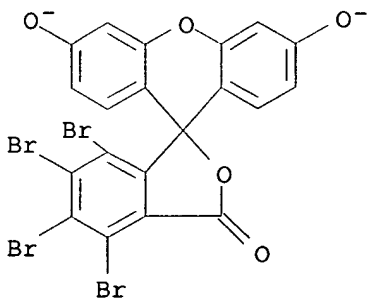


2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 116:196204

REFERENCE 2: 114:32231

L2 ANSWER 4 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 131362-49-7 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4,5,6,7-tetrabromo-3',6'-dihydroxy-, ion(2-) (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H6 Br4 O5
SR CA
LC STN Files: CA, CAPLUS



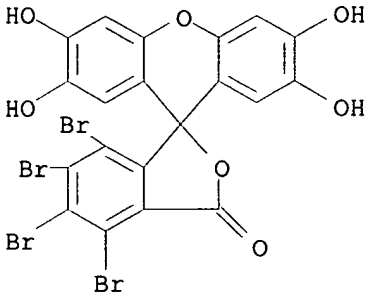
2 REFERENCES IN FILE CA (1967 TO DATE)

2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 116:196204

REFERENCE 2: 114:32231

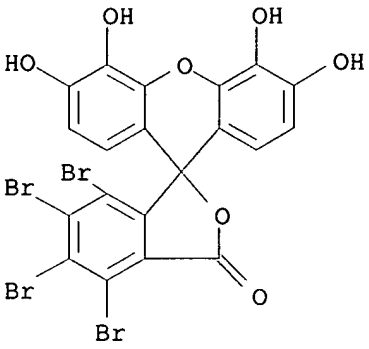
L2 ANSWER 5 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 111537-43-0 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4,5,6,7-tetrabromo-2',3',6',7'-tetrahydroxy- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H8 Br4 O7
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 107:232453

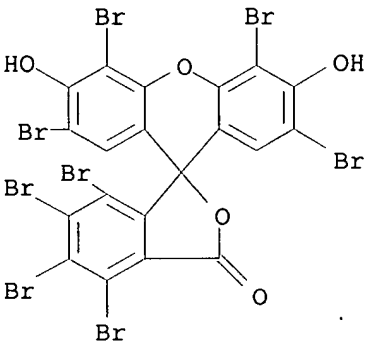
L2 ANSWER 6 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 111537-42-9 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4,5,6,7-tetrabromo-3',4',5',6'-tetrahydroxy- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H8 Br4 O7
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 107:232453

L2 ANSWER 7 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 94418-47-0 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxy- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H4 Br8 O5
CI COM
LC STN Files: BEILSTEIN*, CA, CAPLUS, TOXLIT, USPATFULL
(*File contains numerically searchable property data)



5 REFERENCES IN FILE CA (1967 TO DATE)
5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 112:122110

REFERENCE 2: 112:66435

REFERENCE 3: 109:119407

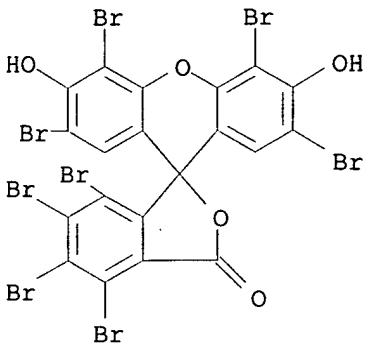
REFERENCE 4: 103:118277

REFERENCE 5: 102:57771

L2 ANSWER 8 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 91462-89-4 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-2',4',5',7'-tetraiodo-, disodium salt, mixt. with 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxyspiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one disodium salt (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxy-, disodium salt, mixt. contg. (9CI)
MF C20 H8 I4 O5 . C20 H4 Br8 O5 . 4 Na
CI MXS
LC STN Files: CA, CAPLUS, TOXLIT

CM 1

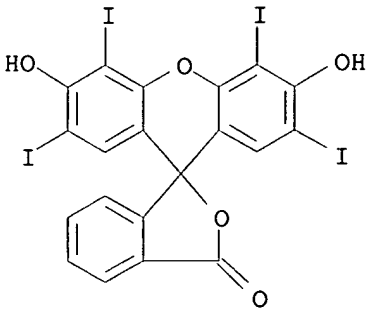
CRN 77274-97-6 (94418-47-0)
CMF C20 H4 Br8 O5 . 2 Na



● 2 Na

CM 2

CRN 16423-68-0 (15905-32-5)
CMF C20 H8 I4 O5 . 2 Na

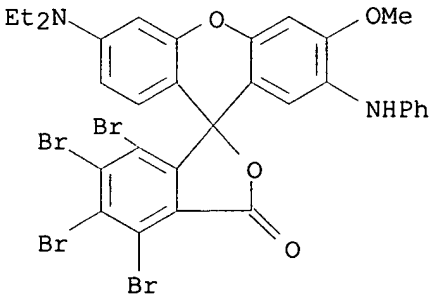


● 2 Na

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 101:85633

L2 ANSWER 9 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 90052-21-4 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4,5,6,7-tetrabromo-6'-(diethylamino)-3'-methoxy-2'-(phenylamino)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C31 H24 Br4 N2 O4
LC STN Files: CA, CAPLUS

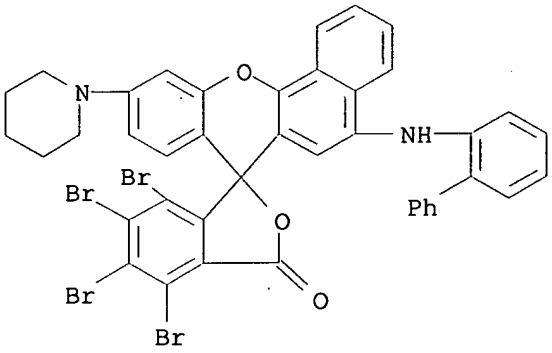


1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 100:193533

L2 ANSWER 10 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 87841-23-4 REGISTRY
CN Spiro[7H-benzo[c]xanthene-7,1'(3'H)-isobenzofuran]-3'-one, 5-([1,1'-biphenyl]-2-ylamino)-4',5',6',7'-tetrabromo-10-(1-piperidinyl)-(9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C41 H28 Br4 N2 O3

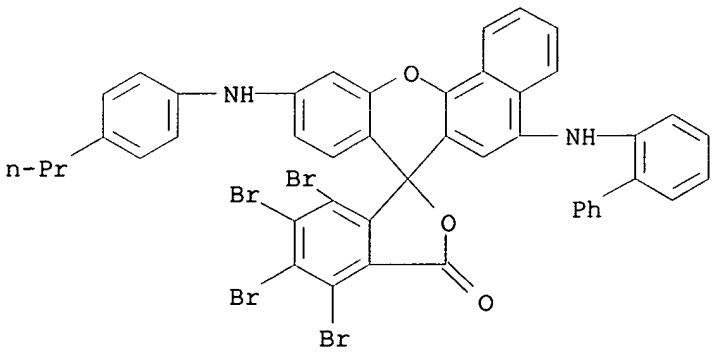
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 99:196645

L2 ANSWER 11 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 87841-21-2 REGISTRY
CN Spiro[7H-benzo[c]xanthene-7,1'(3'H)-isobenzofuran]-3'-one, 5-([1,1'-biphenyl]-2-ylamino)-4',5',6',7'-tetrabromo-10-[(4-propylphenyl)amino]- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C45 H30 Br4 N2 O3
LC STN Files: CA, CAPLUS

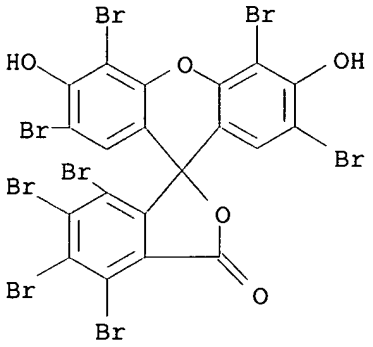


1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 99:196645

L2 ANSWER 12 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 77274-97-6 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,4',5,5',6,7,7'-octabromo-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)

DR 91462-88-3
MF C20 H4 Br8 O5 . 2 Na
CI COM
LC STN Files: CA, CAPLUS, TOXLIT
CRN (94418-47-0)



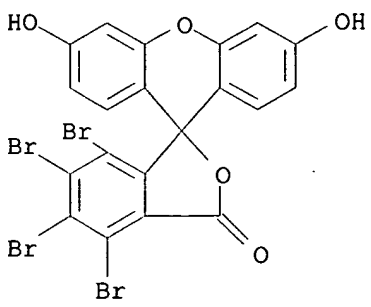
● 2 Na

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 101:85633

REFERENCE 2: 94:158301

L2 ANSWER 13 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 73654-97-4 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
4,5,6,7-tetrabromo-3',6'-
dihydroxy- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3,4,5,6-Tetrabromofluorescein
CN 4,5,6,7-Tetrabromofluorescein
FS 3D CONCORD
MF C20 H8 Br4 O5
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMCATS, TOXLIT
(*File contains numerically searchable property data)



4 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

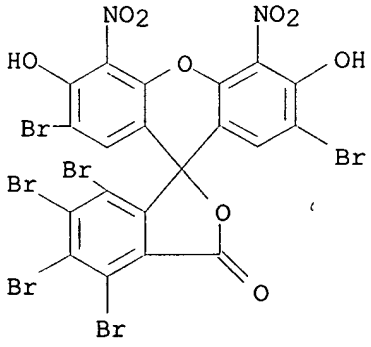
REFERENCE 1: 115:138195

REFERENCE 2: 109:119407

REFERENCE 3: 97:209795

REFERENCE 4: 92:208358

L2 ANSWER 14 OF 15 REGISTRY COPYRIGHT 1999 ACS
RN 56360-44-2 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4,5,6,7,7'-hexabromo-3',6'-dihydroxy-4',5'-dinitro- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C20 H4 Br6 N2 O9
LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, USPATFULL



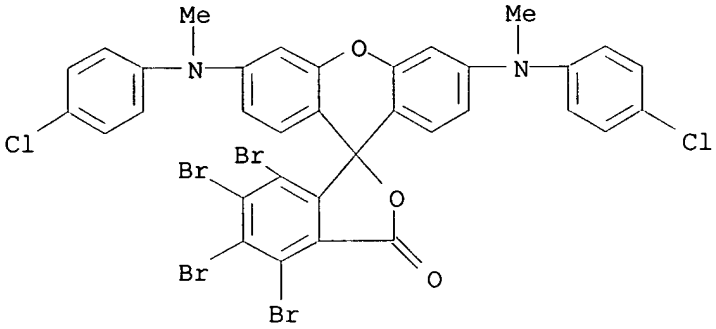
2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 83:186318

REFERENCE 2: 83:69080

L2 ANSWER 15 OF 15 REGISTRY COPYRIGHT 1999 ACS

RN 33019-45-3 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one,
4,5,6,7-tetrabromo-3',6'-
bis[(4-chlorophenyl)methylamino]- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Fluoran, 4,5,6,7-tetrabromo-3',6'-bis(p-chloro-N-methylanilino)- (8CI)
FS 3D CONCORD
MF C34 H20 Br4 Cl2 N2 O3
LC STN Files: CA, CAPLUS



4 REFERENCES IN FILE CA (1967 TO DATE)
4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 77:7303

REFERENCE 2: 76:155592

REFERENCE 3: 75:22501

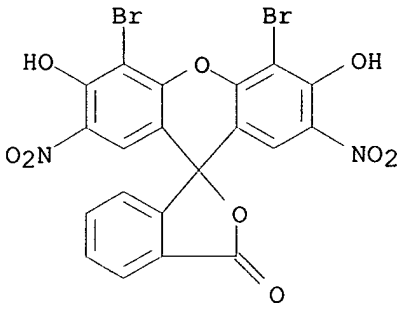
REFERENCE 4: 75:22500

=> d que l7;d l7 ide can 1-5

L3 (1)SEA FILE=REGISTRY ABB=ON "ROSE BENGAL"/CN
L4 (1)SEA FILE=REGISTRY ABB=ON "PHLOXINE B"/CN
L5 (1)SEA FILE=REGISTRY ABB=ON "ERYTHROSIN B"/CN
L6 (2)SEA FILE=REGISTRY ABB=ON "EOSIN B"/CN
L7 5 SEA FILE=REGISTRY ABB=ON L3 OR L4 OR L5 OR L6

L7 ANSWER 1 OF 5 REGISTRY COPYRIGHT 1999 ACS
RN 56360-46-4 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4',5'-dibromo-3',6'-
dihydroxy-2',7'-dinitro- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **Eosin B**
CN Eosine B
CN Eosine B (alcohol soluble)
AR 4372-03-6

FS 3D CONCORD
MF C20 H8 Br2 N2 O9
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOSIS, CA, CAPLUS, CHEMCATS, CSCHEM, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, TOXLIT, USPATFULL
(*File contains numerically searchable property data)



17 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
17 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:86214

REFERENCE 2: 128:140

REFERENCE 3: 127:167154

REFERENCE 4: 125:13270

REFERENCE 5: 124:169947

REFERENCE 6: 123:33990

REFERENCE 7: 121:159358

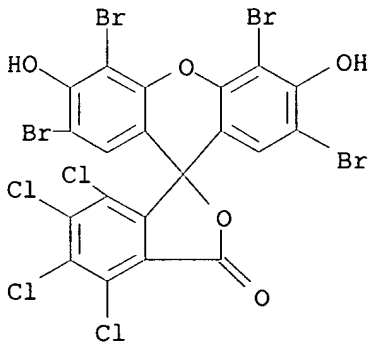
REFERENCE 8: 120:26135

REFERENCE 9: 111:88205

REFERENCE 10: 102:87734

L7 ANSWER 2 OF 5 REGISTRY COPYRIGHT 1999 ACS
RN 18472-87-2 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-4,5,6,7-tetrachloro-3',6'-dihydroxy-, disodium salt (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Fluorescein, 2',4',5',7'-tetrabromo-4,5,6,7-tetrachloro-, disodium salt (8CI)
CN Phloxin B (6CI)
OTHER NAMES:
CN 11969 Red
CN 3427 Veri Pur Pink

CN Acid Red 92
CN Aizen Acid Phloxine PB
CN C.I. 45410
CN C.I. Acid Red 92
CN Cyanosin
CN Cyanosin (acid dye)
CN Cyanosin B
CN Cyanosine
CN D and C Red No. 28
CN Daiwa Red 45
CN Eosin blue
CN Eosin bluish
CN Eosine blue
CN Eosine bluish
CN Food Red 104
CN Food Red No. 104
CN Japan Red 104
CN Japan Red 104-1
CN Orient Water Pink 2
CN **Phloxine B**
CN Phloxine P
CN Red 104
CN Red No. 104
CN Red No.104-1
CN Water Pink 2
AR 4618-23-9
DR 12777-84-3, 51374-31-3, 37361-25-4, 157367-38-9, 198831-99-1
MF C20 H4 Br4 Cl4 O5 . 2 Na
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXLINE, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (13473-26-2)



● 2 Na

459 REFERENCES IN FILE CA (1967 TO DATE)
11 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
460 REFERENCES IN FILE CAPLUS (1967 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 131:163459

REFERENCE 2: 131:158953

REFERENCE 3: 131:149103

REFERENCE 4: 131:131354

REFERENCE 5: 131:35618

REFERENCE 6: 131:35617

REFERENCE 7: 131:35616

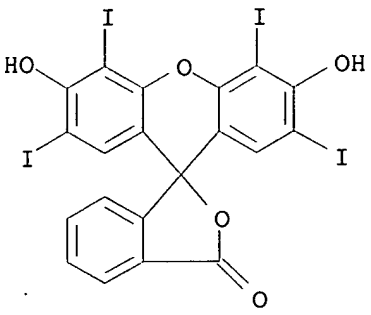
REFERENCE 8: 131:35615

REFERENCE 9: 131:35614

REFERENCE 10: 131:35613

L7 ANSWER 3 OF 5 REGISTRY COPYRIGHT 1999 ACS
RN 16423-68-0 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-2',4',5',7'-tetraiodo-, disodium salt (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Erythrosine B (6CI)
CN Fluorescein, 2',4',5',7'-tetraiodo-, disodium salt (8CI)
OTHER NAMES:
CN 1427 Red
CN 1671 Red
CN 2',4',5',7'-Tetraiodofluorescein disodium salt
CN 2,4,5,7-Tetraiodofluorescein disodium salt
CN Acid Red 51
CN Aizen Erythrosine
CN Aizen Food Red 3
CN C.I. 45430
CN C.I. Acid Red 51
CN C.I. Food Red 14
CN Calcocid Erythrosine N
CN Canacert Erythrosine BS
CN Ceplac
CN Cilefa Pink B
CN D and C Red No. 3
CN Dolkwal Erythrosine
CN E 127
CN Edicol Supra Erythrosin AS
CN Edicol Supra Erythrosine A
CN Erythrosin
CN **Erythrosin B**
CN Erythrosin B sodium salt
CN Erythrosin BS

CN Erythrosine
CN Erythrosine 3B
CN Erythrosine B-FO
CN Erythrosine Bluish
CN Erythrosine BS
CN Erythrosine Extra
CN Erythrosine extra bluish
CN Erythrosine Extra Conc. A Export
CN Erythrosine Extra Pure A
CN Erythrosine I
CN Erythrosine K-FO
CN Erythrosine TB
CN Erythrosine TB Extra
CN FD and C Red 3
CN FD and C Red No. 3
CN FD&C Red No. 3
CN FDC Red 3
CN FDC Red 3 dye
CN Food Color Red 3
CN Food Dye Red 3
CN Food Red 14
CN Food Red 3
CN Food Red No. 3
CN Hexacert Red No. 3
CN Hexacol Erythrosine BS
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for DISPLAY
AR 568-63-8
DR 1342-21-8, 72027-96-4, 198832-03-0
MF C20 H8 I4 O5 . 2 Na
CI COM
LC STN Files: AGRICOLA, AIDSLINE, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS,
CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXLINE, TOXLIT, USAN, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (15905-32-5)



● 2 Na

1551 REFERENCES IN FILE CA (1967 TO DATE)
31 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1554 REFERENCES IN FILE CAPLUS (1967 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 131:157052

REFERENCE 2: 131:151824

REFERENCE 3: 131:149103

REFERENCE 4: 131:106798

REFERENCE 5: 131:80821

REFERENCE 6: 131:80609

REFERENCE 7: 131:78356

REFERENCE 8: 131:69551

REFERENCE 9: 131:55290

REFERENCE 10: 131:52066

L7 ANSWER 4 OF 5 REGISTRY COPYRIGHT 1999 ACS
RN 11121-48-5 REGISTRY
CN **Rose Bengal (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN Bengal Rose
CN Rose Bengale
MF Unspecified
CI COM, MAN
LC STN Files: AGRICOLA, AIDSLINE, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CEN, CHEMCATS, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXLINE, TOXLIT, USPATFULL
(*File contains numerically searchable property data)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
1703 REFERENCES IN FILE CA (1967 TO DATE)
73 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1708 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 131:161712

REFERENCE 2: 131:157052

REFERENCE 3: 131:151824

REFERENCE 4: 131:149103

REFERENCE 5: 131:141684

REFERENCE 6: 131:127178

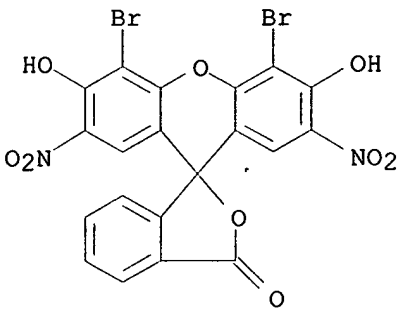
REFERENCE 7: 131:120965

REFERENCE 8: 131:117470

REFERENCE 9: 131:94896

REFERENCE 10: 131:94765

L7 ANSWER 5 OF 5 REGISTRY COPYRIGHT 1999 ACS
RN 548-24-3 REGISTRY
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 4',5'-dibromo-3',6'-dihydroxy-2',7'-dinitro-, disodium salt (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Fluorescein, 4',5'-dibromo-2',7'-dinitro-, disodium salt (8CI)
OTHER NAMES:
CN C.I. 45400
CN C.I. Acid Red 91
CN Dibromodinitrofluorescein sodium
CN **Eosin B**
CN Eosine B
CN Eosine BA
CN Eosine BNX
CN Eosine I Bluish
CN Saffrosine
AR 22736-26-1
DR 134829-78-0
MF C20 H8 Br2 N2 O9 . 2 Na
CI COM
LC STN Files: AGRICOLA, BIOSIS, CA, CAPLUS, CHEMCATS, CHEMLIST, CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, PIRA, TOXLINE, TOXLIT, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (56360-46-4)



● 2 Na

96 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
96 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 131:120136

REFERENCE 2: 131:65221

REFERENCE 3: 130:183930

REFERENCE 4: 130:183929

REFERENCE 5: 130:158504

REFERENCE 6: 130:150342

REFERENCE 7: 130:35353

REFERENCE 8: 129:168021

REFERENCE 9: 129:161839

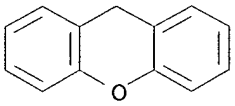
REFERENCE 10: 129:48939

=> d que l8;d l8 ide can

L8 1 SEA FILE=REGISTRY ABB=ON XANTHENE/CN

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 1999 ACS
RN 92-83-1 REGISTRY
CN 9H-Xanthene (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Xanthene (6CI, 7CI, 8CI)**
OTHER NAMES:
CN 10H-9-Oxaanthracene

CN 9-Oxa-9,10-dihydroanthracene
FS 3D CONCORD
MF C13 H10 O
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS,
CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DETHERM*, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXLINE, TOXLIT, ULIDAT, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



518 REFERENCES IN FILE CA (1967 TO DATE)
74 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
518 REFERENCES IN FILE CAPLUS (1967 TO DATE)
33 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 131:144306

REFERENCE 2: 131:141313

REFERENCE 3: 131:129559

REFERENCE 4: 131:106798

REFERENCE 5: 131:96617

REFERENCE 6: 131:91826

REFERENCE 7: 131:20237

REFERENCE 8: 130:336615

REFERENCE 9: 130:327854

REFERENCE 10: 130:293613

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 13:17:41 ON 13 SEP 1999
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

26, 1996), unless otherwise indicated in the original publications.

FILE COVERS 1967 - 13 Sep 1999 VOL 131 ISS 12
FILE LAST UPDATED: 13 Sep 1999 (19990913/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGistRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> d his l9-

(FILE 'HCAPLUS' ENTERED AT 13:02:52 ON 13 SEP 1999)

L9	3994	S	L2 OR L7 OR ROSE BENGAL OR PHLOXINE B OR ERYTHROSIN# B OR
EOS			
L10	60	S	(XANTHENE# OR L8/D) (L) (BROMO? OR IODO? OR HALOGEN?)
L11	4038	S	L10 OR L9
L12	47962	S	PHOTOSEN? OR IONIZ? (L) RADIAT?
L13	3656	S	IMAG? (L) CONTRAST?
L14	5009	S	RADIOSENS?
L15	610	S	L11 AND (L12 OR L13 OR L14)
L16	12047	S	IONIZ? (L) RADIAT?
L17	1	S	L11 AND L14
L18	0	S	L11 AND L13
L19	1	S	L11 AND L16
L20	0	S	CAT SCA
L21	5	S	CAT SCAN
L22	191022	S	X RAY
L23	821	S	CONTRAST MEDIUM
L24	8886	S	TOMOGRAPHY
L25	1	S	L11 AND L24
L26	1	S	L11 AND L23
L27	12	S	L11 AND L22
L28	13	S	L17 OR L19 OR L25 OR L26 OR L27
L29	39297	S	DELIVER?
L30	26	S	L11 AND L29
L31	560715	S	TISSUE# OR DISEAS? OR DISORDER?
L32	111	S	L11 AND L31
L33	3	S	L32 AND L29
L34	35945	S	PHOTOSEN?
L35	2784	S	PHOTODYNAMIC (L) THERAP?
L36	609	S	L11 AND L34
L37	16	S	L11 AND L35
L38	0	S	CHEMICAL PARTION?
L39	0	S	L11 AND L38
L40	1	S	L30 AND (MICELLE# OR NANOPART? OR LIPOSOME?)
L41	17	S	L40 OR L33 OR L28
L42	1944	S	PHOTOTHERAP?
L43	9	S	L42 AND L11
L44	9	S	L43 NOT L41
L45	243	S	L11 AND 8/SX,SC
L46	8	S	L37 NOT (L41 OR L44)

FILE 'REGISTRY' ENTERED AT 13:16:38 ON 13 SEP 1999

FILE 'HCAPLUS' ENTERED AT 13:17:41 ON 13 SEP 1999

=> d .ca l41 1-17;d .ca l44 1-9;d .ca l46 1-8

L41 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1999:485028 HCAPLUS
DOCUMENT NUMBER: 131:150595
TITLE: Spectroelectrochemistry
AUTHOR(S): Hinoe, Teruo
CORPORATE SOURCE: Faculty of Sciecne, Shinshu University', Nagano-ken, Matsumoto-shi, Asahi, 390-8621, Japan
SOURCE: Bunseki (1999), (7), 580-587
CODEN: BUNSD3; ISSN: 0386-2178
PUBLISHER: Nippon Bunseki Kagakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review with 90 refs. from 1996 to 1998 is given on UV-visible spectroscopy, electroreflectance, fluorometric spectroscopy, surface plasmon resonance, IR spectroscopy, Raman spectroscopy, second harmonic generation and sum frequency generation, ESR and NMR, XPS, mass spectrometry, and photothermal beam deflection.
CC 72-0 (Electrochemistry)
Section cross-reference(s): 73, 79, 80
IT Fluorometry
(for kinetic study of **eosin Y** at water/dichloroethane interface , etc.)
IT **X-ray** photoelectron spectroscopy
(for study of electrodeposition and corrosion, etc.)

L41 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1999:48605 HCAPLUS
DOCUMENT NUMBER: 130:129967
TITLE: Targeted liposomal constructs for diagnostic and therapeutic uses
INVENTOR(S): Geho, Blair W.; Lau, John R.
PATENT ASSIGNEE(S): SDG, Inc., USA
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9901110	A1	19990114	WO 1998-US13846	19980702

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,

FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9882859 A1 19990125 AU 1998-82859 19980702
PRIORITY APPLN. INFO.: US 1997-52740 19970702
WO 1998-US13846 19980702

AB This invention provides a liposomal construct for delivering a diagnostic or therapeutic agent to a mammal comprising a liposomal carrier, a diagnostic or therapeutic agent entrapped within or assocd. with the liposomal carrier and a sequestering agent distributed within the liposomal carrier to reduce leakage of the diagnostic or therapeutic agent from the liposomal construct prior to delivery. Claimed liposomal constructs include biogenic amines for deliver them to the hepatocytes. ATP was used as a liposomal sequestrant for serotonin along with the lipid membrane constituents of 1,2-distearoyl-sn-glycerol-3-phosphatidylcholine, dicetyl phosphate, N-(2,6-diisopropylphenylcarbamoylmethyl)iminodiacetic acid and cholesterol.

IC ICM A61K009-127
ICS A61K031-135; A61K047-24; A61K047-42; A61K047-00

CC 63-6 (Pharmaceuticals)

ST **liposome** drug diagnostic biogenic amine targeting

IT Hepatocyte
(biogenic amine **delivery** to; targeted liposomal constructs contg. diagnostic and therapeutic agents and sequestering agents)

IT 5-HT agonists
Adrenoceptor agonists
Drug targeting
Liposomes (drug **delivery** systems)
Sequestering agents
(targeted liposomal constructs contg. diagnostic and therapeutic agents and sequestering agents)

IT 50-44-2, 6-Mercaptopurine 50-67-9, Serotonin, biological studies 51-41-2, Norepinephrine 51-43-4, Epinephrine 51-45-6, Histamine, biological studies 51-84-3, Acetylcholine, biological studies 52-67-5, Penicillamine 56-12-2, biological studies 56-65-5, ATP, biological studies 58-64-0, ADP, biological studies 58-97-9, UMP, biological studies 58-98-0, UDP, biological studies 59-92-7, L-DOPA, biological studies 60-54-8, Tetracycline 61-19-8, Adenosine 5'-monophosphate, biological studies 63-37-6, CMP 63-38-7, Cytidine 5'-diphosphate 63-39-8, UTP 65-47-4, CTP 71-67-0, Bromosulphthalein 77-09-8, Phenolphthalein 83-86-3, Phytic acid 85-32-5, GMP 86-01-1, GTP 115-39-9, Bromophenol blue 146-91-8, GDP 365-07-1, TMP 365-08-2, TTP 491-97-4, TDP 573-58-0, Congo red 606-17-7, Iodipamide 635-65-4, Bilirubin, biological studies 1062-98-2, Adenosine-5'-tetraphosphate 2411-89-4, Phthalein complexone 2507-91-7 2618-25-9, Ioglycamic acid 3369-85-5, Guanosine-5'-tetraphosphate 3599-32-4, Indocyanine green 8064-12-8, Verografin 10003-95-9, Thymidine-5'-tetraphosphate **11121-48-5, Rose bengal** 13934-03-7 13934-07-1 17372-87-1, Eosin 21462-56-6, Thyroxineglucuronide 25296-54-2, Phenolphthalexon 25629-29-2 26473-47-2 37251-80-2, Toluidine blue 41072-11-1 57212-58-5, Pyridoxylidene isoleucine 59160-29-1, N-(2,6-Dimethylphenylcarbamoylmethyl)iminodiacetic acid

61601-56-7D, CholylGlycylhistamine, iodo derivs. 63245-28-3
65717-97-7, N-(2,6-Diisopropylphenylcarbamoylmethyl)-iminodiacetic acid
66292-52-2, N-(4-Butylphenylcarbamoylmethyl)iminodiacetic acid
66292-53-3 68983-55-1 74791-68-7 74791-70-1 74791-71-2
74791-75-6 74791-76-7 75281-26-4, Pyridoxylidene tryptophan
75297-21-1 78266-06-5 82690-44-6 89218-91-7 219786-30-8
219786-31-9 219786-32-0 219786-33-1 219786-34-2 219786-35-3
219786-36-4 219786-37-5 219786-38-6 219786-39-7 219786-40-0
219786-41-1 219786-42-2 219786-43-3 219786-44-4 219786-45-5
219786-46-6 219786-47-7 219786-48-8
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(targeted liposomal constructs contg. diagnostic and therapeutic agents
and sequestering agents)

L41 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1998:547066 HCAPLUS
DOCUMENT NUMBER: 129:256987
TITLE: High sensitivity of Deinococcus radiodurans to photodynamically-produced singlet oxygen
AUTHOR(S): Schafer, M.; Schmitz, C.; Horneck, G.
CORPORATE SOURCE: DLR, Institute Aerospace Medicine, Koln, 51170, Germany
SOURCE: Int. J. Radiat. Biol. (1998), 74(2), 249-253
CODEN: IJRBE7; ISSN: 0955-3002
PUBLISHER: Taylor & Francis Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Purpose: To study the sensitivity of two bacterial cell systems to photodynamic treatment and X-ray irradn. as part of a project to establish efficient procedures for waste water disinfection. Materials and methods: Stationary-phase cells of Deinococcus radiodurans (Gram-pos.) and Escherichia coli (Gram-neg.) were exposed to visible light in a buffer soln. contg. up to 5 pg/mL sensitizer rose bengal (RB) and to X-rays at dose rates of 328 Gy/min or 146 Gy/min, resp. Results: Survival of both cell types decreased with increasing exposure time to visible light and increasing concn. of RB, and therefore with an increase in singlet oxygen prodn. Surprisingly, D. radiodurans, the most resistant cell system to ionizing radiation, was more sensitive to photodynamic treatment than E. coli by about a factor of 100. Conclusions: The main target of singlet oxygen reaction is the cell membrane. The repair of such damage in D. radiodurans is less effective than in E. coli.
CC 8-3 (Radiation Biochemistry)
Section cross-reference(s): 60, 61
IT Cell membrane
Deinococcus radiodurans
Light sensitization
Photodynamic action
Wastewater disinfection
X-ray
(high sensitivity of Deinococcus radiodurans to photodynamically-produced singlet oxygen)
IT 7782-44-7, Oxygen, biological studies **11121-48-5, Rose bengal**
RL: BAC (Biological activity or effector, except adverse); BIOL

(Biological study)
(high sensitivity of Deinococcus radiodurans to photodynamically-produced singlet oxygen)

L41 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:690825 HCAPLUS
DOCUMENT NUMBER: 128:1692
TITLE: Formaldehyde-free **tissue** preservative compositions
INVENTOR(S): Dunphy, Brian William
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5679333	A	19971021	US 1996-738048	19961025

AB Formaldehyde-free tissue preservative compns. are useful in the fields of mortuary science and histol. The compns. disinfect and preserve animal (including human) tissues and remains, yet avoid the use of formaldehyde and formalin, potentially hazardous materials that are undergoing increasing regulatory review. A trio of compns. for use in embalming human bodies is disclosed, as is a compn. for use in histol. preservation.
As an example, a formaldehyde-free tissue preservative is claimed that comprises an aq. soln. of EtOH, ethanedial, a polymer (e.g., PEG), a polar aprotic solvent (e.g., DMSO), and furthermore a humectant (e.g., 1,2-ethanediol), antimicrobial agent (e.g., hexadecylpyridinium chloride), and a chelating agent (EDTA or a salt thereof).
IC ICM A61L009-00
ICS A01N001-00
NCL 424075000
CC 9-11 (Biochemical Methods)
Section cross-reference(s): 13
ST formaldehyde free **tissue** preservation embalming soln; disinfectant **tissue** preservation compn; histol **tissue** preservation compn
IT Sulfonic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(alkane, sodium salts; formaldehyde-free **tissue** preservative compns.)
IT Polar solvents
(aprotic; formaldehyde-free **tissue** preservative compns.)
IT Peritoneum
Thorax
(cavity; formaldehyde-free **tissue** preservative compns.)
IT Preservation solutions (**tissue**)
(embalming solns.; formaldehyde-free **tissue** preservative compns.)
IT Animal **tissue**

Anionic surfactants
Antibacterial agents
Antimicrobial agents
Body (anatomical)
Cadaver
Chelating agents
Clostridium perfringens
Detergents
Disinfectants
Histochemistry
Humectants
Injections (drug **delivery** systems)
Nonionic surfactants
Organ preservation
Preservation solutions (**tissue**)
Sporicides
Surfactants
(formaldehyde-free **tissue** preservative compns.)

IT Alcohols, biological studies
Aldehydes, biological studies
Carboxylic acids, biological studies
Polyoxyalkylenes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(formaldehyde-free **tissue** preservative compns.)

IT Aprotic solvents
(polar; formaldehyde-free **tissue** preservative compns.)

IT Preservatives
(**tissue**; formaldehyde-free **tissue** preservative compns.)

IT 80-05-7, Bisphenol A, biological studies 123-03-5, 1-Hexadecylpyridinium chloride 9001-92-7, Protease
RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(formaldehyde-free **tissue** preservative compns.)

IT 50-00-0, Formaldehyde, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(formaldehyde-free **tissue** preservative compns.)

IT 60-00-4D, EDTA, salts 64-17-5, Ethanol, biological studies 64-19-7, Acetic acid, biological studies 67-68-5, DMSO, biological studies 107-21-1, 1,2-Ethanediol, biological studies 107-22-2, Ethanedial 139-33-3, Disodium EDTA 7558-79-4, Disodium phosphate 7632-05-5, Sodium phosphate 17372-87-1, **Eosin Y** 25322-68-3, PEG
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(formaldehyde-free **tissue** preservative compns.)

L41 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:113413 HCAPLUS
DOCUMENT NUMBER: 126:114823
TITLE: Crosslinkable polypeptide compositions and their use in **delivery** of biologically active agents to subjects

INVENTOR(S): Sojomihardjo, Soebianto A.; Desai, Neil P.; Sandford, Paul A.; Soon-shiong, Patrick; Nagrani, Shubhi
PATENT ASSIGNEE(S): Vivorx Pharmaceuticals, Inc., USA; Sojomihardjo, Soebianto, A.; Desai, Neil, P.; Sandford, Paul, A.; Soon-Shiong, Patrick; Nagrani, Shubhi
SOURCE: PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9640829	A1	19961219	WO 1996-US7424	19960521
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN				
AU 9658012	A1	19961230	AU 1996-58012	19960521
PRIORITY APPLN. INFO.:			US 1995-484724	19950607
			WO 1996-US7424	19960521

AB In accordance with the present invention, there are provided rapidly crosslinkable polypeptides which are obtained upon introduction of unsatd. group(s) into the polypeptide via linkage to amino acid residues on the polypeptide directly through one of three types of linkages, namely, an amide linkage, an ester linkage, or a thioester linkage. Each of these linkages are obtainable in a single step by use of a single derivatizing agent, acrylic anhydride. Also provided are methods for prepg. such modified polypeptides and various uses therefor. It has unexpectedly been found that proteins with the above-described chem. modifications have the ability to rapidly crosslink to themselves under suitable conditions. This crosslinking occurs in the absence of any external crosslinking agents (indeed, in the absence of any extraneous agents), resulting in the formation of a solid gel material. Solid crosslinked gels are formed in seconds, starting from a freely flowing soln. of polypeptide. Applications of such materials are broad ranging, including the encapsulation of living cells, the encapsulation of biol. ative materials, the in situ formation of degradable gels, the formation of wound dressings, the prevention of post-surgical adhesions, gene delivery, drug targetting, as a microcarrier for culture of living cells, and the like. Albumin was reacted with acrylic anhydride to produce a photopolymerizable albumin deriv. A soln. of this deriv., insulin, a free radical initiator (ethyl eosin), a cocatalyst (triethanolamine), and an accelerator (vinyl pyrrolidinone) was irradiated with an Hg lamp to encapsulate the insulin. Diabetic rats were injected with the encapsulated insulin. This compn. was able to maintain lower blood sugar for a longer period of time than the control, com. injectable insulin.

IC ICM C08L089-00
CC 6-3 (General Biochemistry)

Section cross-reference(s): 9, 63
ST crosslinkable protein bioactive agent **delivery**
IT Animal cells
(coating with crosslinked proteins of surfaces of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)
IT Albumins, biological studies
Caseins, biological studies
Collagens, biological studies
Fibrinogens
Fibronectins
Gelatins, biological studies
Hemoglobins
Immunoglobulins
Interferons
Interleukin 1
Interleukin 2
Lactalbumins
Laminins
Ovalbumin
Proteins (specific proteins and subclasses)
Transferrins
Transforming growth factors
Tumor necrosis factors
Vitronectin
.alpha.2-Macroglobulins
RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(derivs., unsatd. group-contg.; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)
IT Hepatocyte
Islet of Langerhans
(encapsulation of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)
IT Cytokines
Drugs
Enzymes, biological studies
Hormones (animal), biological studies
Nucleic acids
Peptides, biological studies
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(encapsulation of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)
IT Cytokines
RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(macrophage-activating factor, derivs., unsatd. group-contg.; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)
IT Cytokines
RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(macrophage-inhibiting factor, derivs., unsatd. group-contg.;

crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT **Tissue** culture (animal)
(microcarriers of crosslinked proteins for; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Parturition
(modified proteins for induction of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Immune system
(modified proteins for regulation of; crosslinkable polypeptide compns.
and their use in **delivery** of biol. active agents to subjects)

IT Erythropoiesis
Fibrinolysis
(modified proteins for stimulation of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Bone **diseases**
Dwarfism
Gaucher **disease**
Hemophilia
Lung **diseases**
(modified proteins for treatment of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Carcinoma inhibitors
Wound healing (animal)
(modified proteins for use as; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Cosmetics
(modified proteins for use in; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Adhesion (physical)
(post-operative, prevention of; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT Acid halides (organic)
Anhydrides
Unsaturated fatty acids
RL: RCT (Reactant)
(proteins reaction with; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT 74-79-3, Arginine, uses 102-71-6, uses 105-59-9 121-44-8, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(cocatalyst in photopolymn. of protein derivs.; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT 50-99-7, D-Glucose, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(modified proteins for regulation of; crosslinkable polypeptide compns.
and their use in **delivery** of biol. active agents to subjects)

IT 61-73-4, Methylene blue 83-88-5, Riboflavin, uses 98-86-2D, Acetophenone, derivs. 119-61-9D, Benzophenone, derivs. 134-81-6D, Benzil, derivs. 492-22-8D, Thioxanthone, derivs. 581-64-6, Thionine 2321-07-5, Fluorescein 6359-05-3, Ethyl eosin 7476-46-2 **11121-48-5, Rose bengal 16423-68-0,** Erythrosin 17372-87-1, Eosin 24650-42-8

RL: NUU (Nonbiological use, unclassified); USES (Uses)
(photosensitizer in photopolymn. of protein derivs.; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT 79-10-7, 2-Propenoic acid, reactions 79-39-0D, Methacrylamide, N-alkylol derivs. 79-41-4, reactions 760-93-0, Methacrylic anhydride 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride 923-02-4, N-Methylol methacrylamide 924-42-5, N-Methylol acrylamide 2051-76-5, Acrylic anhydride
RL: RCT (Reactant)
(proteins reaction with; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

IT 50-56-6DP, Oxytocin, derivs. 8001-27-2DP, Hirudin, derivs. 9000-92-4DP, Amylase, derivs. 9001-28-9DP, Factor IX, derivs. 9001-62-1DP, Lipase, derivs. 9001-63-2DP, Lysozyme, derivs. 9001-75-6DP, Pepsin, derivs. 9002-01-1DP, Streptokinase, derivs. 9002-07-7DP, Trypsin, derivs. 9002-72-6DP, Growth hormone, derivs. 9004-07-3DP, Chymotrypsin, derivs. 9004-10-8DP, Insulin, derivs. 9007-12-9DP, Calcitonin, derivs. 9035-68-1DP, Proinsulin, derivs. 9039-53-6DP, Urokinase, derivs. 9041-92-3DP, derivs. 9054-89-1DP, Superoxide dismutase, derivs. 11096-26-7DP, Erythropoietin, derivs. 37228-64-1DP, Glucocerebrosidase, derivs. 51110-01-1DP, Somatostatin, derivs. 53678-77-6DP, Muramyl dipeptide, derivs. 61912-98-9DP, Insulin-like growth factor, derivs. 62031-54-3DP, Fibroblast growth factor, derivs. 62229-50-9DP, Epidermal growth factor, derivs. 62683-29-8DP, Colony-stimulating factor, derivs. 113189-02-9DP, Factor VIII, derivs. 139639-23-9DP, **Tissue** plasminogen activator, derivs.
RL: BUU (Biological use, unclassified); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(unsatd. group-contg.; crosslinkable polypeptide compns. and their use in **delivery** of biol. active agents to subjects)

L41 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 1999 ACS

ACCESSION NUMBER: 1997:51832 HCAPLUS
DOCUMENT NUMBER: 126:141512
TITLE: Method of inactivation of viral and bacterial blood contaminants
INVENTOR(S): Goodrich, Raymond P., Jr.; Platz, Matthew S.; Yerram, Nagender; Hackett, Roger W.; Van Borssum Waalkes, Marjan; Williams-Hughes, Christine M.; Wong, Victoria A.
PATENT ASSIGNEE(S): Credit Managers Association of California, USA
SOURCE: U.S., 50 pp. Cont.-in-part of U.S. Ser. No. 47,749.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 9
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5587490	A	19961224	US 1993-165305	19931210

CA 2056619	AA	19911017	CA 1991-2056619 19910416
US 5342752	A	19940830	US 1991-686334 19910416
US 5516629	A	19960514	US 1994-311125 19940922
US 5789601	A	19980804	US 1995-427080 19950421
US 5798238	A	19980825	US 1995-474459 19950607
US 5869701	A	19990209	US 1995-461626 19950705

PRIORITY APPLN. INFO.:
US 1990-510234 19900416
US 1990-632277 19901220
US 1991-656254 19910215
US 1991-685931 19910416
US 1991-686334 19910416
US 1992-825691 19920127
US 1993-47749 19930414
US 1993-91674 19930713
US 1993-165305 19931210
US 1994-311125 19940922
US 1994-343680 19941122

OTHER SOURCE(S): MARPAT 126:141512

AB Compds. are provided for inactivating viral, bacterial or other contamination in cells, body fluids or fractions thereof. The compds. comprise a psoralen with a single substituent that is either a quaternary phosphonium or ammonium moiety, and at least one substituent that is a halogen. The compd. selectively binds to the contaminant, and upon activation by irradn., damages the contaminant. Prepn. of e.g. 5-bromo-8-(.gamma.-triethylaminopropyloxy)psoralen hydrochloride is described, as is inactivation of viruses and bacteria in e.g. plasma by use of the radiosensitizers of the invention.

IC ICM C07D493-04

NCL 549282000

CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 28

ST psoralen deriv prepn **radiosensitizer** blood contaminant; virus bacteria inactivation blood psoralen deriv; cell contaminant **radiosensitizer** psoralen deriv; body fluid contaminant **radiosensitizer** psoralen deriv

IT Freeze drying
(lyophilized plasma; psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT Coliphage .lambda.
Coliphage .phi.X174
Enterobacteria phage R17
Erythrocyte
Escherichia coli
Plasma (blood)
Platelet (blood)
Pseudomonas phage .phi.6
Radiosensitizers (biological)
Serum (blood)
Structure-activity relationship
UV A radiation
UV radiation
(psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 1930-54-7P, 5-Bromo-8-methoxypsoralen 1930-60-5P 151109-13-6P 162327-44-8P 162327-47-1P 162327-48-2P 186751-64-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and reaction; psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 126-73-8, Tri(n-butyl) phosphate, biological studies 2321-07-5, Fluorescein 9005-65-6, Tween 80 **11121-48-5, Rose bengal** 17372-87-1, **Eosin Y**
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 156574-51-5P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 602-52-8 69187-66-2 74165-97-2 102791-10-6 123943-96-4 139602-11-2 150375-73-8 162327-41-5 162327-42-6 162327-43-7 186751-48-4 186751-49-5 186751-50-8
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 162327-45-9P 162327-46-0P 163549-32-4P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 109-64-8, 1,3-Dibromopropane 110-18-9 121-44-8, reactions 298-81-7, 8-Methoxypsoralen 554-70-1, Triethylphosphine 3179-63-3
RL: RCT (Reactant)
(reaction; psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 113189-02-9, Blood coagulation factor VIII, procoagulant
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(sensitivity; psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

IT 7439-89-6, Iron, biological studies 7439-96-5, Manganese, biological studies 7439-98-7, Molybdenum, biological studies 7440-02-0, Nickel, biological studies 7440-05-3, Palladium, biological studies 7440-16-6,
Rhodium, biological studies 7440-22-4, Silver, biological studies 7440-32-6, Titanium, biological studies 7440-33-7, Tungsten, biological studies 7440-47-3, Chromium, biological studies 7440-48-4, Cobalt, biological studies 7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**x-ray** target source selection in relation to psoralen derivs., prepn. thereof, and use as **radiosensitizers** in inactivation of viral and bacterial blood contaminants)

L41 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:609819 HCAPLUS
DOCUMENT NUMBER: 125:276799

TITLE: Self-Assembled Chromophoric NLO-Active Structures. Second-Harmonic Generation and **X-ray** Photoelectron Spectroscopic Studies of Nucleophilic Substitution and Ion Exchange Processes on Benzyl Halide-Functionalized Surfaces

AUTHOR(S): Roscoe, Stephen B.; Yitzchaik, Shlomo; Kakkar, Ashok K.; Marks, Tobin J.; Xu, Zuyan; Zhang, Tongguang; Lin, Weiping; Wong, George K.

CORPORATE SOURCE: Department of Chemistry, Northwestern University, Evanston, IL, 60208-3113, USA

SOURCE: Langmuir (1996), 12(22), 5338-5349
CODEN: LANGD5; ISSN: 0743-7463

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The progress and extent of nucleophilic substitution and ion exchange reactions of self-assembled chromophoric monolayers are studied by X-ray photoelectron (XPS) and second harmonic generation (SHG) spectroscopy. Self-assembled monolayers prepd. from 2-[4-(chloromethyl)phenyl]ethyl trichlorosilane on glass substrates are susceptible to nucleophilic substitution of .apprx.90% of the surface-confined benzylic chloride functionalities with the "hypernucleophile" 4-(dimethylamino)pyridine; however, only .apprx.60% of the densely packed benzyl chloride groups undergo reaction with the high-.beta. chromophore precursor 4'-[4-[N,N-bis(3-hydroxypropyl)amino]styryl]pyridine. Quaternization of a benzylic monolayer with this mol. yields a monolayer having a bulk second-order NLO response (.chi.(2)) of 3 .times. 10-7 esu at .lambda.0 = 1064 nm, corresponding to a near-max. chromophore coverage of .apprx.2 .times. 1014 mols./cm2. The kinetics of this substitution reaction and assocd. structural modifications are studied in real time by in situ polarized SHG techniques, which reveal non-Langmuirian kinetics and a rapidly increasing chromophore tilt angle with increasing coverage. The quaternization kinetics can be fit to a phenomenol. biexponential rate equation with k'1 .apprxeq. 2 .times. 10-2 L mol-1 s-1 and k'2 .apprxeq. 2 .times. 10-3 L mol-1 s-1 and to a coverage-dependent activation energy model (EA = E0 + Eb.theta.), yielding a perturbative energy Eb of 6-8 kJ mol-1. Both models are compatible with increasing repulsive interactions between chromophores at high coverages. The charge-compensating chloride counterions within monolayers of dense chromophore packing can be ion exchanged with iodide, up to a max. of .apprx.40% of available chloride ions. The introduction of larger anions (sulfanilate, ethyl orange, eosin B) is obsd. in less densely packed films; however, the ion exchange process is completely inhibited in monolayers capped with a siloxane overlayer. In all cases, exchange of the chloride leads to significant increases in the second-harmonic generation efficiency, up to 45% on exchange with eosin B. In the case of iodide and sulfanilate substitution for chloride, the increase in the second-order response upon ion exchange is attributable to the incoming anion assuming a position within the monolayer microstructure different from that of the displaced anion.

CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 73

IT Laser radiation
Substitution reaction, nucleophilic

(second-harmonic generation and **x-ray** photoelectron spectroscopic studies of nucleophilic substitution and ion exchange processes on benzyl halide-functionalized surfaces)
IT Optical nonlinear property
(hyperpolarizability, second-harmonic generation and **x-ray** photoelectron spectroscopic studies of nucleophilic substitution and ion exchange processes on benzyl halide-functionalized surfaces)
IT Adsorbed substances
(monolayer, second-harmonic generation and **x-ray** photoelectron spectroscopic studies of nucleophilic substitution and ion exchange processes on benzyl halide-functionalized surfaces)
IT Optical nonlinear property
(second-harmonic generation, second-harmonic generation and **x-ray** photoelectron spectroscopic studies of nucleophilic substitution and ion exchange processes on benzyl halide-functionalized surfaces)
IT 121-57-3, Sulfanilic acid 311-28-4, Tetrabutylammonium iodide **548-24-3**, Dibromodinitrofluorescein sodium 13545-67-0, Ethyl orange
RL: RCT (Reactant)
(anion exchange with bis(3-hydroxypropyl)aminostyrylpyridine reaction product with surface-adsorbed chlorobenzyl-contg. silsesquioxane)
IT 182884-30-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(surface absorbed monolayer; second-harmonic generation and **x-ray** photoelectron spectroscopic studies of nucleophilic substitution and ion exchange processes on benzyl halide-functionalized surfaces)

L41 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1995:818777 HCAPLUS
DOCUMENT NUMBER: 123:222385
TITLE: Agent for visual marking of body tissues
INVENTOR(S): Heywang-Koebrunner, Sylvia; Weitschies, Werner; Speck, Ulrich; Fritzsch, Thomas
PATENT ASSIGNEE(S): Schering A.-G., Germany
SOURCE: Ger. Offen., 5 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4403789	A1	19950810	DE 1994-4403789	19940203
WO 9520981	A1	19950810	WO 1995-EP123	19950113
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2182686	AA	19950810	CA 1995-2182686	19950113
EP 742724	A1	19961120	EP 1995-906937	19950113
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				

JP 09508397 T2 19970826 JP 1995-520342 19950113
PRIORITY APPLN. INFO.: DE 1994-4403789 19940203
WO 1995-EP123 19950113

AB The invention concerns the use of colored NMR or x-ray contrast media or of dye-contg. ultrasound contrast media for the prepn. of diagnostic agents for the visual marking of body tissues. Some possible agents that are discussed are: NMR (metalloporphyrins, iron oxide particles, nitroxides, melanin); x-ray (Rose Bengal, erythrosin, tetrachlorotetraiodofluorescein); and ultrasound (dye-contg. ultrasound contrast media microparticles composed of a covering of a biol. degradable polymer and a gas- and dye-contg. center).

IC ICM A61K049-00
ICS A61K051-00; A61K049-04; A61K009-50; A61K009-58; C07F013-00
ICA C01G049-08; C09B047-00; C09B061-00; C09K011-06; C09B011-28
CC 9-16 (Biochemical Methods)
Section cross-reference(s): 8, 13, 14
ST body tissue visual marking contrast agent; NMR contrast agent body tissue marking; **x ray** contrast agent tissue marking; ultrasound contrast agent body tissue marking
IT **Tomography**
(NMR, contrast agents, agents for visual marking of body tissues)
IT 61-73-4, Methylene blue 502-97-6, Glycolide 1309-38-2, Magnetite, biological studies 1317-61-9, Iron oxide, biological studies 9004-66-4, SHU 555 **11121-48-5**, **Rose bengal** **16423-68-0**, Erythrosin 25154-80-7, Poly(butyl 2-cyanoacrylate) 26545-52-8, Tetrachlorotetraiodofluorescein 34346-01-5 59199-59-6, DL-Lactic acid-glycolic acid copolymer 75268-90-5 168202-59-3
RL: NUU (Nonbiological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(agents for visual marking of body tissues)

L41 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1995:776295 HCAPLUS
DOCUMENT NUMBER: 123:164221
TITLE: Photodynamic and Radiolytic Inactivation of Ion Channels Formed by Gramicidin A: Oxidation and Fragmentation
AUTHOR(S): Kunz, Lars; Zeidler, Ulrich; Haegele, Klaus; Przybylski, Michael; Stark, Guenther
CORPORATE SOURCE: Department of Biology, University of Konstanz, Konstanz, Germany
SOURCE: Biochemistry (1995), 34(37), 11895-903
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ion channels formed by the peptide gramicidin A in planar lipid membranes have been reported to react very sensitively upon irradn. of the membrane by ionizing radiation (radiolysis), by UV light (photolysis). or by visible light in the presence of appropriate photosensitizers (photodynamic inactivation). In all three cases the effect is due to the presence of the four tryptophan residues of the pentadecapeptide. Modifications of these amino acids-due to an interaction with free radicals formed upon water radiolysis or due to light absorption-have been found to reduce the membrane conductance by many orders of magnitude. The

present study was intended to correlate functional changes, obsd. at the level of single ion channels, with changes of the mol. structure identified by mass spectrometry. About 98% of the inactivated channels showed a single-channel conductance of virtually zero, while about 2% of the channels present before irradn. are converted to a state of reduced conductance (and reduced lifetime). On the structural level, irradn. in the presence of the photosensitizer Rose Bengal was found to produce oxidn. and fragmentation of the peptide at the positions of the tryptophan residues. Our results provide evidence that the main effect of radiolysis, or of photodynamic treatment, is the cleavage of the peptide backbone leading to immediate closure of an open ion channel.

CC 8-10 (Radiation Biochemistry)

IT Light
Photodynamic action
Photosensitizers
X-ray
(photodynamic and radiolytic inactivation of gramicidin A ion channels:
oxidn. and fragmentation)

IT Radiolysis
(**x-ray**, photodynamic and radiolytic inactivation of gramicidin A ion channels: oxidn. and fragmentation)

IT **11121-48-5, Rose bengal**
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(photodynamic and radiolytic inactivation of gramicidin A ion channels:
oxidn. and fragmentation)

L41 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1995:494630 HCAPLUS
DOCUMENT NUMBER: 122:234390
TITLE: Photosensitization method of inactivation of viral and bacterial blood contaminants
INVENTOR(S): Platz, Matthew S.; Goodrich, Raymond P., Jr.; Yerram, Nagendar
PATENT ASSIGNEE(S): Cryopharm Corp., USA
SOURCE: PCT Int. Appl., 169 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 9
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9502324	A1	19950126	WO 1994-US7499	19940706
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5418130	A	19950523	US 1993-91674	19930713
AU 9472177	A1	19950213	AU 1994-72177	19940706
PRIORITY APPLN. INFO.:			US 1993-91674	19930713

US 1990-510234 19900416
US 1990-632277 19901220
US 1991-656254 19910215
US 1991-685931 19910416
US 1992-825691 19920127
US 1993-47749 19930414
WO 1994-US7499 19940706

OTHER SOURCE(S): MARPAT 122:234390

AB A method is provided for inactivating viral and/or bacterial contamination in blood cellular matter, e.g. erythrocytes, platelets, or protein fractions. The cells or protein fractions are mixed with chem. sensitizers and irradiated with e.g. UV, visible, gamma, or x-ray radiation. Prepn. of some sensitizer compds. is included, as are inactivation studies.

IC ICM A01N001-02
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 28

IT Animal tissue culture
Animal tissue
Apparatus
Bacteria
Blood corpuscle
Blood plasma
Blood platelet
Blood serum
Blood
Detergents
Erythrocyte
Freeze drying
Freezing
Gamma ray
Genetic engineering
Hybridoma
Leukocyte
Light
Neoplasm
Optical fibers
Parasite
Photosensitizers
Solvents
Sublimation
Ultraviolet radiation
Virus
X-ray
(photosensitization method of inactivation of viral and bacterial and parasitic contaminants in blood (component) or cell culture (component))

IT **Radiation**
(**ionizing**, photosensitization method of inactivation of viral and bacterial and parasitic contaminants in blood (component) or cell culture (component))

IT **11121-48-5, Rose bengal** 17372-87-1,
Eosin Y 64358-50-5 65282-35-1 74165-97-2
81771-16-6 102791-10-6 123943-96-4 150375-73-8 150391-39-2
156574-50-4 162327-40-4 162327-41-5 162327-42-6 162327-43-7
RL: BAC (Biological activity or effector, except adverse); THU

(Therapeutic use); BIOL (Biological study); USES (Uses)
(photosensitization method of inactivation of viral and bacterial and parasitic contaminants in blood (component) or cell culture (component))

IT 7439-89-6, Iron, biological studies 7439-96-5, Manganese, biological studies 7439-98-7, Molybdenum, biological studies 7440-02-0, Nickel, biological studies 7440-05-3, Palladium, biological studies 7440-16-6, Rhodium, biological studies 7440-22-4, Silver, biological studies 7440-32-6, Titanium, biological studies 7440-33-7, Tungsten, biological studies 7440-47-3, Chromium, biological studies 7440-48-4, Cobalt, biological studies 7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**x-ray** target source; photosensitization method of inactivation of viral and bacterial and parasitic contaminants in blood
(component) or cell culture (component))

L41 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1993:525222 HCAPLUS
DOCUMENT NUMBER: 119:125222
TITLE: Vectored drug **delivery** system using cephaloplastin linking agent
INVENTOR(S): Sharma, Yash P.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 14 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5225182	A	19930706	US 1991-786044	19911031

AB Drugs are targeted to organs, tissues or cells by conjugation to a nonantibody vector, using cephaloplastin as a coupling agent. The vectors are aggregated or colloid albumin, disofenin, sulfur, etc. Cis-platinum(II) diamine dichloride was conjugated with macroaggregated albumin, using cephaloplastin. When the conjugate was i.v. injected into mice with exptl. colon carcinoma, the conjugate caused more tumor shrinkage than cis-platinum itself.
IC ICM A61K037-00
ICS A61K049-00; C07K003-08; C07K017-00
NCL 424009000
CC 63-6 (Pharmaceuticals)
IT Analgesics
Antibiotics
Cardiotonics
Neoplasm inhibitors
(conjugates, with vectoring agents, cephaloplastin linking agent in, for targeting **tissues** and organs and cells)
IT Hormones
Vitamins

RL: BIOL (Biological study)
(conjugates, with vectoring agents, cephaloplastin linking agent in, for targeting **tissues** and organs and cells)

IT 51-43-4D, conjugates with cephaloplastin and vectoring agents 57-83-0D, Progesterone, conjugates with cephaloplastin and vectoring agents 67-43-6D, conjugates with cephaloplastin and pharmaceuticals 69-53-4D, Ampicillin, conjugates with cephaloplastin and vectoring agents 100-33-4D, Pentamidine, conjugates with cephaloplastin and vectoring agents 147-58-0D, conjugates with cephaloplastin and pharmaceuticals 304-55-2D, conjugates with cephaloplastin and pharmaceuticals 1464-42-2D, Selenomethionine, conjugates with cephaloplastin and pharmaceuticals 2809-21-4D, conjugates with cephaloplastin and pharmaceuticals 7704-34-9D, Sulfur, conjugates with cephaloplastin and pharmaceuticals 7791-12-0D, Thallous chloride, conjugates with cephaloplastin and pharmaceuticals 9002-72-6D, Growth hormone, conjugates with cephaloplastin and vectoring agents 9005-49-6D, Heparin, conjugates with cephaloplastin and vectoring agents 9035-58-9D, Cephaloplastin, conjugate with drugs and vectoring agents 11056-06-7D, Bleomycin, conjugates with cephaloplastin and vectoring agents **11121-48-5D, Rose bengal**, conjugates with cephaloplastin and pharmaceuticals 15663-27-1D, conjugates with cephaloplastin and vectoring agents 23351-51-1D, conjugates with cephaloplastin and pharmaceuticals 30403-03-3D, Gallium citrate, conjugates with cephaloplastin and pharmaceuticals 65717-97-7D, conjugates with cephaloplastin and pharmaceuticals
RL: BIOL (Biological study)
(for targeting to organs and **tissues** and cells)

L41 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1991:171315 HCAPLUS
DOCUMENT NUMBER: 114:171315
TITLE: Pharmaceutical compositions useful as drug delivery vehicles and/or as wound dressings
INVENTOR(S): Gibson, Mark; Taylor, Peter Mark; Payne, Nicholas Ian;
Gould, Philip Leon
PATENT ASSIGNEE(S): American Cyanamid Co., USA
SOURCE: Eur. Pat. Appl., 27 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 386960	A2	19900912	EP 1990-302256	19900302
EP 386960	A3	19911023		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
GB 2229443	A1	19900926	GB 1989-5138	19890307
CA 2011423	AA	19900907	CA 1990-2011423	19900302
NO 9001048	A	19900910	NO 1990-1048	19900306
AU 9050769	A1	19900920	AU 1990-50769	19900307
AU 632539	B2	19930107		
JP 02300114	A2	19901212	JP 1990-56280	19900307
PRIORITY APPLN. INFO.:			GB 1989-5138	19890307

GB 1989-21944 19890928

AB A pharmaceutical compn. comprises an aq. vehicle, a compd. having reversible thermosetting gel properties and a compd. having film-forming properties. Depending on the relative proportions of these components, the compn. can be adapted to function either as a vehicle for delivering pharmacol.- or diagnostically-active compds. to a human or animal patient and/or as a wound-dressing compn. The gel-former is polyoxyethylene-polyoxypropylene block copolymer or its derivs., and the film-former hydroxyethyl cellulose, hydroxypropyl Me cellulose or PVA. An ophthalmic compn. (pH 8.3; ethanolamine) comprised biphenylacetic acid ethanolamine salt 0.5, Pluronic F127 8.0, hydroxyethyl cellulose 8.0, sorbitol 2.5, benzalkonium chloride 0.01, borate buffer 2.0, and water to 100%.

IC ICM A61K047-34
ICS A61K047-38; A61L015-28; A61K009-06

CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 9

IT **11121-48-5, Rose Bengal**
RL: BIOL (Biological study)
(ophthalmic diagnostic compn. contg.)

IT 737-31-5, Sodium diatrizoate
RL: BIOL (Biological study)
(**x-ray** contrast compn. contg.)

L41 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1989:616135 HCAPLUS
DOCUMENT NUMBER: 111:216135
TITLE: Water-thinned colored ink compositions for data input on **X-ray** films
INVENTOR(S): Fujita, Hisanari; Shoji, Yukito
PATENT ASSIGNEE(S): Sakura Color Products Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01126382	A2	19890518	JP 1987-291452	19871118
JP 07076319	B4	19950816		
JP 01124841	A2	19890517	JP 1987-291453	19871118
JP 07076828	B4	19950816		
JP 01138276	A2	19890531	JP 1987-291450	19871118
JP 07076317	B4	19950816		
JP 01138277	A2	19890531	JP 1987-291451	19871118
JP 07076318	B4	19950816		

PRIORITY APPLN. INFO.: JP 1987-216098 19870828

AB Title compns. comprise solns. of simple substances or compds. of elements with at. no. .gtoreq.47 (excepting rare gases) as X-ray barrier in such amts. as to obtain mass absorption coeff. .gtoreq.0.170 cm2/g against X-ray of 0.1 .ANG. wavelength and sulfonate- or carboxylate-contg. triphenylmethane or xanthene dyes in solvents composed of H2O and C2-6 glycols, C3-9 triols, or C3-9 alkylene glycol monoalkyl ethers. Thus, data written on paper by a compn. with mass absorption coeff. 0.643 cm2/g of NaI 55, H2O 43, HOCH2CH2OH 1, and Acid Yellow 73 1 part was pasted to an X-ray film for easy and sure data write-in.

IC ICM C09D011-00
ICS C09D011-00; G03B042-02
CC 42-12 (Coatings, Inks, and Related Products)
IT Dyes
(triphenylmethane and xanthene, in inks for writing data on **X-ray** films)
IT Inks
(water-thinned, writing, contg. **X-ray** barriers and triphenylmethane or xanthene dyes, for writing data to be photographed on **X-ray** films)
IT 56-81-5, Glycerin, uses and miscellaneous 7564-64-9, 3-Methylpentane-1,3,5-triol 7681-11-0, Potassium iodide, uses and miscellaneous 7681-82-5, Sodium iodide, uses and miscellaneous 7790-60-5, Potassium tungstate (K2WO4) 10139-47-6, Zinc iodide 13472-45-2 13587-19-4, Cesium tungstate (Cs2WO4) 56539-66-3, 3-Methyl-3-methoxybutanol
RL: USES (Uses)
(**X-ray** barrier, inks contg., for writing data to be photographed on **X-ray** films)
IT 519-73-3
RL: USES (Uses)
(dyes, triphenylmethane and xanthene, in inks for writing data on **X-ray** films)
IT 518-47-8, Acid Yellow 73 632-68-8 2650-18-2, Acid Blue 9 5873-16-5, Acid Red 50 6104-58-1, Acid Blue 90 **16423-68-0**, Acid Red 51 17372-87-1, Acid Red 87 **18472-87-2**, Acid Red 92
RL: USES (Uses)
(inks contg. **X-ray** barriers and, for writing data to be photographed on **X-ray** films)

L41 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1984:153403 HCAPLUS
DOCUMENT NUMBER: 100:153403
TITLE: Energy dispersive **x-ray** microanalysis of vital dye (**erythrosin B**) stained cells
AUTHOR(S): Walker, S. R.; Ingram, P.; Shelburne, J. D.
CORPORATE SOURCE: Dep. Pathol., Duke Univ., Durham, NC, 27710, USA
SOURCE: J. Microsc. (Oxford) (1984), 133(2), RP3-RP4
CODEN: JMICAR; ISSN: 0022-2720
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rabbit alveolar macrophages were stained with erythrosin B, freeze-fixed, cryosectioned, examd. for population viability, and then analyzed by electron microprobe as described by K. Masters et al. (1979). This method correlates plasma membrane integrity status with results of electron microprobe anal.
CC 9-10 (Biochemical Methods)
Section cross-reference(s): 13, 79
ST electron microprobe erythrosin staining cell; energy dispersive **x-ray** analysis
IT Electron microprobe analysis
(for animal cells, **erythrosin B** staining combined with)
IT Staining, biological
(of animal cells, by **erythrosin B** for plasma

membrane integrity detection, electron microprobe anal. combined with)
IT **16423-68-0**
RL: ANST (Analytical study)
(staining by, of animal cells for membrane integrity detection, electron microprobe anal. combined with)

L41 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1978:575804 HCAPLUS
DOCUMENT NUMBER: 89:175804
TITLE: Intensification of x-chemiluminescence of serum albumin solutions by the addition of dyes
AUTHOR(S): Sapezhinskii, I. I.; Dontsova, E. G.
CORPORATE SOURCE: Inst. Chem. Phys., Moscow, USSR
SOURCE: Biofizika (1978), 23(4), 583-8
CODEN: BIOFAI; ISSN: 0006-3029
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The effect of different dyes on chemiluminescence of human serum albumin solns. was studied after x-irradn. (9.5 rads/s). Addn. of uranin (Na fluorescein), rosin, tetrachlorofluorescein, and erythrosin intensified the luminescence. Detailed studies of the kinetics of chemiluminescence with uranin indicated the following: (1) the kinetic regularities of the reaction specify mainly the rapid component of x-ray-induced chemiluminescence; (2) the initiation of chemiluminescence is related to the reactions of protein groups with OH; (3) the intensification of luminescence occurs in the protein-dye complex; and (4) the light emission of activated chemiluminescence originates from singlets of bound dye.
CC 8-13 (Radiation Biochemistry)
ST **x ray** chemiluminescence albumin dye; uranin **x ray** chemiluminescence serum albumin
IT **X-ray**, biological effects
(on serum albumins, chemiluminescence after, dyes effect on)
IT 518-47-8 **16423-68-0** 17372-87-1 26761-84-2
RL: BIOL (Biological study)
(serum albumin chemiluminescence after **x-ray** irradn. response to)

L41 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1977:180568 HCAPLUS
DOCUMENT NUMBER: 86:180568
TITLE: Specific rate constants of hydroxyl radical and hydrated electron reactions determined by the RCL method
AUTHOR(S): Pruetz, W. A.; Vogel, S.
CORPORATE SOURCE: Inst. Biophys. Strahlenbiol., Univ. Freiburg, Freiburg/Br., Ger.
SOURCE: Z. Naturforsch., B: Anorg. Chem., Org. Chem. (1976), 31B(11), 1501-10
CODEN: ZNBAD2
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Relative rate consts. of OH radical and eaq- reactions were detd. by comparing, under steady x-irradn., the effect of various solutes upon the radiation-induced chemiluminescence (RCL) of aq. dye (DH) soln., [DH + OH] + eaq- .fwdarw. DH* + OH-. The results confirm other published data.

changes upon addn. of phosphates indicate prototropic reactions with the oxidized dye, D.cntdot. + H2PO4- .dblharw. DH.cntdot.+ + HPO42-, promoting or inhibiting the formation of semioxidized dye, (DH.cntdot.+) as the most efficient RCL precursor. The RCL enhancement commonly obsd. upon addn. of halide and pseudo halides is discussed at some length on the basis of previous and present results in order to focus attention to the possible correlation between such RCL enhancement and the effect of halogen-sensitization in radiobiol. RCL results suggest that the halide transients formed from OH radicals, X- + .cntdot.OH .fwdarw. X.cntdot. + OH-, are very powerful oxidizing agents reacting with aroms. by electron-abstraction rather than by addn. or H-abstraction. The common application of I- and SCN- as competitors for the estn. of OH radical reactivities is commented on in that context.

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic Processes)
Section cross-reference(s): 8, 67

IT **X-ray**, chemical and physical effects
(chemiluminescence of dyes in aq. solns. induced by, in study of hydroxyl and hydrated electron reaction kinetics)

IT Kinetics, reaction
(of hydroxyl radical and hydrated electron, with solutes in aq. solns., **x-ray**-induced chemiluminescence in study of)

IT Polaron in solution
(reaction of, with solutes in aq. solns., kinetics of, **x-ray**-induced chemiluminescence in study of)

IT Luminescence, radio-
(**x-ray**, of dyes in aq. solns. from x-irradn., for hydroxyl radical and hydrated-electron kinetics studies)

IT 81-88-9 118-92-3 2321-07-5 8048-52-0 **18472-87-2** 63285-24-5
RL: PRP (Properties)
(chemiluminescence of, in aq. solns., induced by x-rays, in study of hydroxyl and hdyrated electron reaction kinetics)

IT 53-84-9 64-17-5, reactions 68-10-0 79-06-1, reactions 128-53-0 152-34-1 13408-62-3 13907-45-4 14280-50-3, reactions 14357-05-2, reactions 14526-03-5, reactions 14701-21-4, reactions 15158-11-9, reactions 15454-31-6 15541-45-4 22537-48-0, reactions 26638-03-9
RL: RCT (Reactant)
(reaction of, with hydrated electron in aq. soln., kinetics of, **x-ray**-induced chemiluminescence in study of)

IT 50-69-1 50-99-7, reactions 56-81-5, reactions 58-86-6, reactions 61-90-5, reactions 62-53-3, reactions 63-68-3, reactions 67-63-0, reactions 67-68-5, reactions 71-00-1, reactions 71-36-3, reactions 71-50-1, reactions 75-65-0, reactions 107-21-1, reactions 120-72-9, reactions 123-31-9, reactions 123-91-1, reactions 141-53-7 147-85-3, reactions 516-06-3 590-28-3 13943-58-3 17421-79-3 26628-22-8
RL: RCT (Reactant)
(reaction of, with hydroxyl radical in aq. solns., kinetics of, **x-ray**-induced chemiluminescence in study of)

IT 14280-30-9, reactions
RL: RCT (Reactant)
(reaction of, with solutes in aq. solns., kinetics of, **x-ray**-induced chemiluminescence in study of)

L41 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1967:476316 HCAPLUS
DOCUMENT NUMBER: 67:76316
TITLE: Medical use of **erythrosin B**
INVENTOR(S): Heitz, Fernand A. D.; Rosier, Jacques L. G.; Behar, Abraham
PATENT ASSIGNEE(S): Centre National de la Recherche Scientifique
SOURCE: Fr. M., 2 pp.
CODEN: FMXXAJ
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 3820		19660214	FR	19640310

AB Erythrosin B (2,4,5,7-tetraiodofluorescein) can be used as opacity contrast drug. After i.v. injection, it concd. rapidly in the bile, and at the fifth hr. in the pancreatic juice. Concn. of 0.02% can be detected. LD50 for mouse is 375 mg./kg. For scintillography, the 131I or
132I -marked erythrosin can be used.
IC A61K; C07D
CC 63 (Pharmaceuticals)
IT Radiography
(contrast media for, **erythrosin B** as)
IT **568-63-8**
RL: BIOL (Biological study)
(as radiographic **contrast medium**)

L44 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:418715 HCAPLUS
DOCUMENT NUMBER: 125:109068
TITLE: Single crayfish neuron as a new test-object for search
and examination of PDT photosensitizers
AUTHOR(S): Uzdensky, Anatoly B.; Kutko, Olga Yu.; Pasikova, Natalya V.
CORPORATE SOURCE: Dept. Biophysics and Biocybernetics, Rostov State University, Rostov-on-Don, 344104, Russia
SOURCE: Proc. SPIE-Int. Soc. Opt. Eng. (1996), 2625(Photochemistry: Photodynamic Therapy and Other Modalities), 512-518
CODEN: PSISDG; ISSN: 0277-786X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An isolated crayfish stretch receptor neuron was used as a new test-object
for cytophysiol. study of various photosensitizers. This large cell is very suitable for complex electrophysiol. and cytol. investigation. It generates spikes with a nearly const. frequency, and dynamics of impulse activity shifts under the laser irradn. may be precisely studied at this

stable background. The exptl. procedure was as follows: 30 min control spike frequency registration - 30 min neuron staining - He-Ne-laser irradn. with continuous registration of cell response dynamics. The typical response of photosensitized neuron to laser irradn. was impulse activity acceleration after some latency and then irreversible block of spike generation. Dependencies of spike frequency acceleration and neuron lifetime on photosensitizer concn. allowed to compare different photosensitizer efficiencies. As the first set of photosensitizers methylene blue, janus green, rose bengal, and chlorin e6, were studied. Chlorin e6 was most potent photosensitizer among them. Such approach provides evaluation of both: initial threshold alteration in cell membrane and cytotoxic events leading to the cell death.

CC 8-9 (Radiation Biochemistry)

IT **Phototherapy**
(chemo-, crayfish neuron as test object for PDT photosensitizers searching and examn.)

IT 61-73-4, Methylene blue 2869-83-2, Janus green B **11121-48-5**, Bengal rose 19660-77-6, Chlorin e6
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photosensitizer; crayfish neuron as test object for PDT photosensitizers searching and examn.)

L44 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:348602 HCAPLUS
DOCUMENT NUMBER: 125:80682
TITLE: Quantitative comparison of excited state properties and intensity-dependent photosensitization by **rose bengal**
AUTHOR(S): Stiel, Holger; Teuchner, Klaus; Paul, Andrea; Leupold, Dieter; Kochevar, Irene E.
CORPORATE SOURCE: Max-Born-Institut fuer Nichtlineare Optik und Kurzzeitspektroskopie, Postfach 1107, Berlin, D-12 474, Germany
SOURCE: J. Photochem. Photobiol., B (1996), 33(3), 245-254
CODEN: JPPBEG; ISSN: 1011-1344
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A quant. (multistep) excitation-deactivation model of rose bengal (RB) has been developed which includes energy and electron transfer to oxygen and the possibility of photoproduct formation via higher excited triplet-singlet states. The model is based on previous measurements of non-linear absorption (NLA) and emission of RB with picosecond pulses at 532 nm and on NLA measurements with nanosecond pulses. A coupled rate equation and photon transport equation approach for non-linear light-matter interaction is used. The resulting term scheme with all relevant excited state parameters confirms that (i) in the first excited state of RB, relevant absorption at 532 nm takes place only in the triplet, and (ii) the previously reported intensity dependence of RB-sensitized enzyme inhibition is well modelled by the intensity-dependent RB-T1 population and (as the main process) subsequent energy transfer to form singlet oxygen.

CC 8-9 (Radiation Biochemistry)

ST photosensitization **rose bengal** excited state
IT Photosensitizers
(excited state properties and intensity-dependent photosensitization by
rose bengal)
IT Neoplasm inhibitors
(photosensitizing; excited state properties and intensity-dependent photosensitization by **rose bengal**)
IT **Phototherapy**
(chemo-, excited state properties and intensity-dependent photosensitization by **rose bengal**)
IT Energy level
(excited, excited state properties and intensity-dependent photosensitization by **rose bengal**)
IT Photodynamic action
(therapeutic, excited state properties and intensity-dependent photosensitization by **rose bengal**)
IT **11121-48-5, Rose bengal**
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(excited state properties and intensity-dependent photosensitization by
rose bengal)

L44 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1995:786246 HCAPLUS
DOCUMENT NUMBER: 123:192564
TITLE: Protective effect of amphotericin B against lethal photodynamic treatment in yeast
AUTHOR(S): Lazarova, Galina; Tashiro, Hideo
CORPORATE SOURCE: Inst. Microbiol., Bulgarian Acad. Sci., Sofia, 1113, Bulg.
SOURCE: Microbios (1995), 82(332), 187-96
CODEN: MCBIA7; ISSN: 0026-2633
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of polyenic antibiotic amphotericin B on photodynamically induced cell damage was investigated using Kluyveromyces fragilis. The photosensitizers applied are known to act via cell membrane damage (rose bengal and toluidine blue) or via DNA modification causing genotoxic effects (8-methoxypsoralen). Methylene blue was shown to cause membrane damage comparable with the effect of rose bengal and toluidine blue. Under conditions of photodynamic damage a pronounced protective effect of the antibiotic was evident in increased cell survival with all of the photosensitizers tested. Mitochondrial activity indicated a tendency of the antibiotic to protect the cells. The protective role of amphotericin B is discussed in the light of possible implications for photodynamic therapy of microbial infections.
CC 8-9 (Radiation Biochemistry)
IT **Phototherapy**
(chemo-, amphotericin B protective effect against lethal photodynamic treatment in yeast)
IT 298-81-7, 8-MOP 1397-89-3, Amphotericin B **11121-48-5, Rose bengal** 37251-80-2, Toluidine blue
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amphotericin B protective effect against lethal photodynamic treatment

in yeast)

L44 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1995:401420 HCAPLUS
DOCUMENT NUMBER: 122:182124
TITLE: Photodynamic activity on human larynx epidermoid carcinoma cell line, HEp-2
AUTHOR(S): Ganesan, S.; Masilamani, V.
CORPORATE SOURCE: Department Physics, Anna University, Madras, 600 025, India
SOURCE: Med. Sci. Res. (1994), 22(12), 849-51
CODEN: MSCREJ; ISSN: 0269-8951
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The photodynamic therapy of human larynx epidermoid carcinoma cell line HEp-2 with Ar laser radiation at 514.5 nm and three different photosensitizers, i.e., HPD, eosin-Y and DHE.
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 14
IT **Phototherapy**
(chemo-, photodynamic activity on human larynx epidermoid carcinoma cell line, HEp-2 of photosensitizers and laser radiation)
IT 17372-87-1, **Eosin-Y** 68335-15-9, HPD 87806-31-3, DHE
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photodynamic activity on human larynx epidermoid carcinoma cell line, HEp-2 of photosensitizers and laser radiation)

L44 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1994:239238 HCAPLUS
DOCUMENT NUMBER: 120:239238
TITLE: Photodynamic therapy mediated induction of early response genes
AUTHOR(S): Luna, Marian C.; Wong, Sam; Gomer, Charles J.
CORPORATE SOURCE: Clayton Ocular Oncol. Cent., Child. Hosp., Los Angeles, CA, 90027, USA
SOURCE: Cancer Res. (1994), 54(5), 1374-80
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Photodynamic therapy (PDT) generates reactive oxygen species which initiate the cytotoxic events of this tumor treatment. The authors demonstrate that PDT mediated oxidative stress induced a transient increase in the early response genes c-fos, c-jun, c-myc, and erg-1 in murine radiation-induced fibrosarcoma cells. Incubation of exponentially growing cells with porphyrin based photosensitizers in the dark also induced an increase in the mRNA levels of early response genes. However, the xanthine photosensitizer, rose bengal, produced increased c-fos mRNA levels only following light treatment. Nuclear runoff expts. confirmed that the induction of c-fos mRNA is controlled in part at the level of transcription. Likewise, a chloramphenicol acetyltransferase reporter construct contg. the major c-fos transcriptional response elements was inducible by porphyrin and PDT. Signal transduction pathways assocd. with
PDT mediated c-fos activation were examd. by treating cells with protein kinase inhibitors. Staurosporine and 1-(5-isoquinolinesulfonyl)-2-methylpiperazine inhibited PDT mediated c-fos activation while

N-(2-guanidinoethyl)-5-isoquinoline-sulfonamide had no effect. In addn., quinacrine, which can inhibit phospholipase activity, blocked PDT induced c-fos mRNA expression. These results suggest that photosensitizer mediated oxidative stress acts through protein kinase-mediated signal transduction pathway(s) to activated early response genes.
CC 8-9 (Radiation Biochemistry)
IT **Phototherapy**
(chemo-, of fibrosarcoma, early response genes induction in)
IT **11121-48-5, Rose bengal** 68335-15-9,
Photofrin 110230-98-3, Mono-1-aspartylchlorin e6
RL: BIOL (Biological study)
(photodynamic therapy with, of fibrosarcoma, early response genes induction in)

L44 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1994:3601 HCAPLUS
DOCUMENT NUMBER: 120:3601
TITLE: Photoinactivation of influenza virus fusion and infectivity by **rose bengal**
AUTHOR(S): Lenard, John; Vanderoee, Roger
CORPORATE SOURCE: Robert Wood Johnson Med. Sch., Univ. Med. Dent., Piscataway, NJ, 08854-5634, USA
SOURCE: Photochem. Photobiol. (1993), 58(4), 527-31
CODEN: PHCBAP; ISSN: 0031-8655
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rose bengal inactivated influenza virus upon exposure to light. Infectivity and fusion were inactivated with the same dose dependence, supporting the suggestion that the virucidal activity of photodynamic agents against enveloped viruses may be generally due to inactivation of their fusion protein(s). Concns. required for inactivation were found to depend upon the ratio of rose bengal to virus, rather than on the nominal aq. concn. Fusion-competent virosomes were inactivated similarly to intact virus particles. The HA2 portion of the influenza fusion protein HA underwent 2 different, apparent mutually exclusive modifications upon illumination with rose bengal: crosslinking, and conversion to a form that moved slightly more slowly on sodium dodecyl sulfate polyacrylamide gel electrophoresis. Inactivation of viral fusion was inhibited by oxygen removal or addn. of azide or .beta.-carotene, and was enhanced by D2O, consistent with partial involvement of singlet oxygen. The possibility of a second mechanism of viral photoinactivation, by direct interaction between the viral fusion protein and the photoactivated dye, is also discussed.
CC 8-3 (Radiation Biochemistry)
ST photoinactivation influenza virus fusion **rose bengal**
IT Photosensitizers
(**Rose Bengal**, of influenza virus with visible light)
IT Hemolysis
(by influenza virus, **Rose Bengal** effect on, photodynamic therapy in relation to)
IT Light
(sensitization to, of influenza virus by **Rose Bengal**)
IT **Phototherapy**

(chemo-, with **Rose Bengal** and visible light, of influenza virus)
IT Virus, animal
(influenza, photodynamic action of **Rose Bengal** on, with visible light)
IT Photodynamic action
(therapeutic, of **Rose Bengal**, on influenza virus with visible light)
IT Organelle
(virosome, hemolysis by, **Rose Bengal** inactivation of, photodynamic therapy in relation to)
IT 7235-40-7, .beta.-Carotene 7782-44-7, Oxygen, biological studies
7789-20-0, Deuterium oxide 26628-22-8, Sodium azide
RL: BIOL (Biological study)
(**Rose Bengal**-induced inactivation of hemolytic activity by influenza virus response to, photodynamic therapy in relation to)

L44 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1993:576746 HCAPLUS
DOCUMENT NUMBER: 119:176746
TITLE: Localization and persistance of **Rose Bengal** in unicellular eukaryote and in experimental tumor
AUTHOR(S): Croce, A. C.; Wyroba, E.; Cuzzoni, C.; Bottiroli, G.
CORPORATE SOURCE: CNR, Pavia, Italy
SOURCE: Int. Congr. Ser. - Excerpta Med. (1992), 1011(Photodynamic Therapy and Biomedical Lasers), 737-41
CODEN: EXMDA4; ISSN: 0531-5131
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The biol. behavior of RB (rose bengal) has been investigated in terms of internalization, localization and retention at the cellular level. Paramecium aurelia, a free living unicellular eukaryote, has been employed as a suitable model, since its physiol. functions, as endocytotic process, can be easily modulated by drug treatments, without affecting cellular properties and activities. The behavior of RB has been compared with that of 2 of the most widely used photosensitizers, (HpD) and disulfonated aluminum phthalocyanine (AlPcSO2). A preliminary study on exptl. tumor-bearing rats has also been performed in an attempt to verify the potentials of RB in higher animals.
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 14
ST **rose bengal** metab eukaryote tumor photochemotherapy
IT Neoplasm, toxic chemical and physical damage
(photodynamic therapy of, with **rose bengal**, metab. studies in relation to)
IT Neoplasm inhibitors
(photosensitizing, **rose bengal**, metab. studies in relation to)
IT Paramecium aurelia
(**rose bengal** metab. and localization in)
IT Photosensitizers

(**rose bengal**, metab. and localization of, in unicellular eukaryotes, photodynamic therapy in relation to)

IT **Phototherapy**
(chemo-, of tumor, with **rose bengal**, metab. and localization studies in unicellular eukaryotes in relation to)

IT Photodynamic action
(therapeutic, of **rose bengal**, on tumor, metab. and localization studies in unicellular eukaryotes in relation to)

IT **11121-48-5, Rose bengal**
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metab. and localization of, in unicellular eukaryotes, tumor photodynamic therapy in relation to)

L44 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1992:465661 HCAPLUS
DOCUMENT NUMBER: 117:65661
TITLE: Effects of laser photothrombosis on corneal neovascularization in rabbits
AUTHOR(S): Park, Sang Chul; Kim, Jae Ho
CORPORATE SOURCE: Med. Coll., Cathol. Univ., Seoul, S. Korea
SOURCE: K'at'ollik Taehak Uihakpu Nonmunjip (1991), 44(4), 1283-96
CODEN: KTUNAA; ISSN: 0368-7015
DOCUMENT TYPE: Journal
LANGUAGE: Korean

AB The efficacy of laser photothrombosis was evaluated in the treatment of new vessels. Using intracorneal 7-0 silk sutues as the stimuli in upper and lower half cornea, corneal neovascularization was induced in 1 eye of each rabbit out of 18 rabbits. After an i.v. injection of rose bengal soln. (20 mg/kg of body wt.), vessels on the upper half of the cornea were treated with a photochem. induced thrombus with <5 shots of argon laser irradn. (514.5 nm, 110 mW, 60-100 .mu.m, and 0.2 s); those on the lower half were used as an internal control. To find the optimal corneal condition for successful photothrombotic occlusion of corneal vessels, 18 rabbits were divided into 2 groups depending on the time interval between suture removal and conducting the photothrombosis. In group A (9 eyes of 9 rabbits), the corneal vessels were irradiated with a laser 28 days after suture removal when the inflammatory reaction had receded. In group B (9 eyes of 9 rabbits), the corneal vessels were treated 3 days after suture removal when the cornea was still in the inflamed state. The changes in corneal vessels caused by photothrombosis were studied by clin. observation and by fluorescien angiog. Histopathol. changes of occluded vessels were examd. by light microscopy and transmission electron microscopy 24 h and 3 mo after conducting the photothrombosis. In group A (little inflammatory reaction group), treated corneal vessels were occluded immediately after the photothrombosis and gradually regressed throughout the 3-mo study period. In group B (much inflammatory reaction group), treated corneal vessels were not occluded throughout the 3-mo study period following the photothrombosis. The main histopathol. changes in occluded vessels by photothrombotic treatment were endothelial disruption and degeneration with thrombi formation. It is suggested that photothrombosis using rose bengal and argon laser would be an effective method for occlusion of corneal vessels under the little inflammatory

reaction condition.
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 14
ST eye cornea neovascularization photothrombosis laser; **rose bengal** laser eye cornea neovascularization
IT Thrombosis
(photo-, laser, in eye corneal neovascularization treatment with **rose bengal**)
IT Photosensitizers
(**rose bengal**, of eye corneal neovascularization to laser radiation)
IT Laser radiation
(sensitization to, of eye neovascularization with **rose bengal**)
IT **Phototherapy**
(chemo-, laser, of eye corneal neovascularization with **rose bengal**)
IT Eye, disease
(neovascularization, photodynamic therapy of, with laser radiation and **rose bengal**)
IT Photodynamic action
(therapeutic, of **rose bengal**, on eye corneal neovascularization with laser radiation)
IT **11121-48-5, Rose bengal**
RL: BIOL (Biological study)
(photodynamic therapy with, of eye corneal neovascularization with laser radiation)

L44 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1986:502583 HCAPLUS
DOCUMENT NUMBER: 105:102583
TITLE: Antibody-therapeutic agent conjugates
INVENTOR(S): Goers, John Walter; Lee, Chyi; Siegel, Richard Charles; McKearn, Thomas Joseph; King, Hurley Dalton; Coughlin, Daniel James; Rodwell, John Dennis; Alvarez, Vernon Leon
PATENT ASSIGNEE(S): Cytogen Corp., USA
SOURCE: Eur. Pat. Appl., 116 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 175617	A2	19860326	EP 1985-401776	19850913
EP 175617	A3	19880615		
EP 175617	B1	19911030		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4867973	A	19890919	US 1984-650375	19840913
WO 8601720	A1	19860327	WO 1985-US1700	19850910
W: AU, DK, JP				
AU 8548071	A1	19860408	AU 1985-48071	19850910
AU 583854	B2	19890511		
JP 62500175	T2	19870122	JP 1985-504137	19850910

CA 1326834	A1	19940208	CA 1985-490424	19850911
ZA 8507064	A	19870527	ZA 1985-7064	19850913
AT 68974	E	19911115	AT 1985-401776	19850913
DK 8602183	A	19860711	DK 1986-2183	19860512
AU 8930161	A1	19890713	AU 1989-30161	19890221
US 5156840	A	19921020	US 1989-327881	19890320
US 5140104	A	19920818	US 1989-426374	19891024
PRIORITY APPLN. INFO.:			US 1984-650375	19840913
			US 1984-650754	19840913
			US 1982-356315	19820309
			US 1982-442050	19821116
			US 1984-646327	19840831
			US 1984-646328	19840831
			WO 1985-US1700	19850910
			EP 1985-401776	19850913
			US 1986-861037	19860508

AB Antibody-therapeutic agent conjugates are prepd. by attaching a therapeutic agent to an antibody or antibody fragment directed against a target antigen. The therapeutic agent is attached either directly or via a cleavable or noncleavable linker to the antibody or antibody fragment. Therapeutic in vivo methods utilizing such antibody-therapeutic agent conjugates are described. Addnl., photosensitizers suitable for use in prepg. antibody-therapeutic agents are described.

IC ICM A61K039-395

CC 63-5 (Pharmaceuticals)
Section cross-reference(s): 15

IT Flavins
RL: PREP (Preparation)
(antibody conjugates, prepn. of, for **phototherapy**, linkers and cleavable elements in)

IT 104086-91-1P 104086-92-2P 104086-93-3P
RL: PREP (Preparation)
(prepn. of, for conjugation to antibodies for **phototherapy**)

IT 72146-89-5DP, carboxylated, hydrazides, reaction products with erythrosine
isothiocyanate 90284-47-2P 104086-84-2P 104086-85-3P 104086-86-4P
RL: PREP (Preparation)
(prepn. of, for conjugation with antibodies for **phototherapy**)

IT 61-73-4DP, derivs., antibody conjugates 66-97-7DP, antibody conjugates 84-65-1DP, derivs., antibody conjugates 92-83-1DP, derivs., antibody conjugates 260-94-6DP, derivs., antibody conjugates 11084-06-3DP, derivs., antibody conjugates **16423-68-0DP**, antibody conjugates 17372-87-1DP, antibody conjugates
RL: PREP (Preparation)
(prepn. of, for **phototherapy**, linkers and cleavable elements in)

IT 448-65-7DP, antibody conjugates 553-12-8DP, antibody conjugates 9001-37-0DP, antibody conjugates 9002-17-9DP, antibody conjugates 9028-79-9DP, antibody conjugates **11121-48-5DP**, antibody conjugates 14459-29-1DP, antibody conjugates
RL: PREP (Preparation)
(prepn. of, for targeted delivery, linkers and cleavable elements in)

ACCESSION NUMBER: 1999:108377 HCAPLUS
DOCUMENT NUMBER: 130:273952
TITLE: Quenching of type II photosensitizers in their triplet states by .alpha.-tocopherol via an electron transfer reaction
AUTHOR(S): Boo, Yong Chool; Lee, Keum Pyo; Jung, Jin
CORPORATE SOURCE: Department of Agricultural Chemistry, Seoul National University, Suwon, 441-744, S. Korea
SOURCE: J. Photosci. (1998), 5(3), 125-129
CODEN: JOPHFS; ISSN: 1225-8555
PUBLISHER: Korean Society of Photoscience
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Occurrence of an electron (or H atom equiv. to one electron plus H+) transfer from .alpha.-tocopherol (.alpha.TOH) to a no. of photosensitizers in their triplet states were investigated by monitoring the ESR signal of .alpha.-chromanoxyl radical (.alpha.TO.bul.) in ethanolic solns. of .alpha.TOH and the sensitizers under continuous illumination. Every sensitizer mol. examd., such as Protochlorophyllide (Pchl), hematoporphyrin and Rose bengal which are generally regarded as efficient type II photosensitizers and thus have long-lived triplet states, was found to actively participate in an electron transfer reaction with .alpha.TOH even under air-satn. conditions, generating .alpha.TO.bul.. The reaction mechanism seemed to involve a noncovalent triplet sensitizer-.alpha.TOH complex as an intermediate in a fashion of Michaelis-Menten type of reaction. For the reaction of .alpha.TOH with triplet Pchl, the rate law was derived by applying the steady state approxn. for the binary complex, triplet Pchl-.alpha.TOH, which turned out to be well consistent with the kinetic data.

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Photodynamic therapy**
(electron transfer quenching of triplet states of type II photosensitizers by .alpha.-tocopherol in relation to)

IT 59-02-9, .alpha.-Tocopherol **11121-48-5**, **Rose bengal** 14459-29-1, Hematoporphyrin 20369-67-9, Protochlorophyllide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(electron transfer quenching of triplet states of type II photosensitizers by .alpha.-tocopherol)

L46 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:606530 HCAPLUS
DOCUMENT NUMBER: 127:244908
TITLE: Enzyme-assisted cell photosensitization: a proposal for an efficient approach to tumor therapy and diagnosis. The **rose bengal** fluorogenic substrate
AUTHOR(S): Bottiroli, G.; Croce, A. C.; Balzarini, P.; Locatelli, D.; Baglioni, P.; Nostro, P. Lo; Monici, M.; Pratesi, R.
CORPORATE SOURCE: Dipartimento di Biologia Animale, Centro di Studio per

l'Istochimica CNR, Universita, Pavia, I-27100, Italy
SOURCE: Photochem. Photobiol. (1997), 66(3), 374-383
CODEN: PHCBAP; ISSN: 0031-8655
PUBLISHER: American Society for Photobiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Rose bengal, a xanthene deriv. among the most efficient producer of singlet oxygen, was submitted to a chem. modification consisting in the introduction of an acetate group into the arom. ring fluorophore structure. The acetate group acts as a quencher, thus inactivating both fluorescence and photosensitization properties of the mol. In the modified structure, rose bengal acts as a fluorogenic substrate giving rise to the cellular reaction termed fluorochromasia. The acetate group is recognized by a carboxylic esterase activity that splits it. Removal of the quencher group results in restoring the native structure of photosensitizer inside the cells. The intracellular turnover of rose bengal acetate was studied in rat glioma-derived cultured cells, in terms of the balance of the processes of influx and enzyme hydrolysis of the fluorogenic substrate, and of the efflux of the fluorescent product. A large intracellular accumulation of photosensitizer is obtained when treatments are performed with the fluorogenic substrate, even at the drug concn. at which rose bengal does not enter the cells. The intracellular localization allows rose bengal to exert a more effective photosensitization effect. Provided that the quencher group is selected according to the metabolic properties of the tumor cells, the use of fluorogenic substrates as photosensitizer precursors could improve fluorescence diagnosis and the photodynamic therapy of tumors, exploiting the biol. properties that distinguish pathol. from normal conditions.

CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 14

ST tumor photosensitization **rose bengal** enzyme

IT **Photodynamic therapy**
Photosensitizers (pharmaceutical)
(enzyme-assisted cell photosensitization: proposal for efficient approach to tumor **therapy** and diagnosis with **rose bengal**)

IT Antitumor agents
(photosensitizing; enzyme-assisted cell photosensitization: proposal for efficient approach to tumor therapy and diagnosis with **rose bengal**)

IT **11121-48-5, Rose bengal**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(enzyme-assisted cell photosensitization: proposal for efficient approach to tumor therapy and diagnosis with **rose bengal**)

L46 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:476258 HCAPLUS
DOCUMENT NUMBER: 127:78231
TITLE: Fluorescent derivatives of paclitaxel and docetaxel with antineoplastic activity, method for producing them and their applications
INVENTOR(S): Amat, Guerri Francisco; Souto, Andre; Acuna, Fernandez
Alberto Ulises; Andreu, Morales Jose Manuel; Barasoain, Blasco M. Isabel; Abal, Miguel

PATENT ASSIGNEE(S): Consejo Superior Investigaciones Cientificas, Spain; Amat Guerri, Francisco; Souto, Andre; Acuna Fernandez, Alberto Ulises; Andreu Morales, Jose Manuel; Barasoain Blasco, M. Isabel; Abal, Miguel
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Spanish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9719938	A1	19970605	WO 1996-ES231	19961129
W: CA, JP, MX, NO, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
ES 2105983	A1	19971016	ES 1995-2361	19951129
ES 2105983	B1	19980701		
ES 2121549	A1	19981116	ES 1996-2522	19961129
ES 2121549	B1	19990616		
PRIORITY APPLN. INFO.:			ES 1995-2361	19951129
			ES 1996-2522	19961129

AB Intensively fluorescent derivs. have been synthesized from a substance used at present as anticancer (chemotherapy) agent, against ovarian and mammal tumors, and other tumors. Said derivs. enable to visualize the cellular target of said drug, since the derivatization does not modify the biol. activity. There is no existing compd. which has the soly., activity and fluorescence characteristics of the compds. disclosed in the present invention. Said derivs. may be used as fluorescence microscopy colorants specific to microtubules of the cytoskeleton in cells and other living organisms. Said derivs. have many applications in the anal. of cell anatomy and in clin. diagnosis.

IC ICM C07D305-14
ICS C07D407-12; A61K049-00; A61K041-00
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 1, 8
IT Antitumor agents
Fluorescence
Fluorometry
Phosphorescence
Photodynamic therapy
(applications of fluorescent derivs. of paclitaxel and docetaxel with antineoplastic activity and a method for producing them)
IT 61-73-4DP, Methylene blue, reaction products with docetaxel and paclitaxel derivs. 81-88-9DP, Rhodamine b, reaction products with docetaxel and paclitaxel derivs. 85-01-8DP, Phenanthrene, reaction products with docetaxel and paclitaxel derivs. 91-20-3DP, Naphthalene, reaction products with docetaxel and paclitaxel derivs. 91-64-5DP, Coumarin, reaction products with docetaxel and paclitaxel derivs. 120-12-7DP, Anthracene, reaction products with docetaxel and paclitaxel derivs. 129-00-0DP, Pyrene, reaction products with docetaxel and paclitaxel

derivs. 531-53-3DP, Azure a, reaction products with docetaxel and paclitaxel derivs. 531-55-5DP, Azure b, reaction products with docetaxel and paclitaxel derivs. 581-64-6DP, Thionine, reaction products with docetaxel and paclitaxel derivs. 989-38-8DP, Rhodamine 6g, reaction products with docetaxel and paclitaxel derivs. 2321-07-5DP, Fluorescein, reaction products with docetaxel and paclitaxel derivs. 2390-63-8DP, Rhodamine 3b, reaction products with docetaxel and paclitaxel derivs. **11121-48-5DP, Rose bengal,** reaction products with docetaxel and paclitaxel derivs. **16423-68-0DP,** Erythrosin, reaction products with docetaxel and paclitaxel derivs. 17372-87-1DP, Eosin, reaction products with docetaxel and paclitaxel derivs. 62669-66-3DP, Rhodamine 19, reaction products with docetaxel and paclitaxel derivs. 62669-70-9DP, Rhodamine 123, reaction products with docetaxel and paclitaxel derivs. 64339-18-0DP, Rhodamine 101, reaction products with docetaxel and paclitaxel derivs. 82354-19-6DP, Texas red, reaction products with docetaxel and paclitaxel derivs. 82419-36-1DP, Floxin, reaction products with docetaxel and paclitaxel derivs.
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(applications of fluorescent derivs. of paclitaxel and docetaxel with antineoplastic activity and a method for producing them)

L46 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:463511 HCAPLUS
DOCUMENT NUMBER: 127:119062
TITLE: **Photodynamic** crosslinking of macromolecules: implications for the mechanism of **photodynamic therapy**
AUTHOR(S): Shen, H.-R.; Spikes, J. D.; Kopeckova, P.; Kopecek, J.
CORPORATE SOURCE: Department of Bioengineering, University of Utah, Salt Lake City, UT, 84112, USA
SOURCE: Proc. Int. Symp. Controlled Release Bioact. Mater. (1997), 24th, 134-135
CODEN: PCRMEY; ISSN: 1022-0178
PUBLISHER: Controlled Release Society, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The objectives of this study were to utilize synthetic, water-sol. N-(2-hydroxypropyl)methacrylamide copolymers contg. .epsilon.-aminocaproic acid side-chains terminating in tyrosine residues to model the photosensitized crosslinking reaction occurring in proteins, to optimize the reaction conditions, and to investigate the detailed mechanisms of photocrosslinking to be able to optimize the design of photosensitizers for PDT. In addn., model compds. such N-benzoyl-His, N-benzoyl-Lys and N-acetyl-Tyr, and an insol. support contg. an optimized spacer terminated in His were utilized to study the mechanism of photosensitized crosslinking in an effort to isolate and characterize the crosslinked products of His-His, His-Lys, and Tyr-Tyr.
CC 8-9 (Radiation Biochemistry)
IT Crosslinking
Photodynamic action
Photodynamic therapy

Photosensitizers (pharmaceutical)
(**photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT Proteins (general), reactions
RL: RCT (Reactant)
(**photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 144598-84-5D, solid support-bound
RL: RCT (Reactant)
(cleavage with .alpha.-chymotrypsin; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 306-14-9 1050-28-8 37700-85-9
RL: RCT (Reactant)
(crosslinking; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 100-01-6D, peptide conjugate
RL: RCT (Reactant)
(model ligand; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 60-18-4D, Tyrosine, methacrylamide polymer conjugate 40704-75-4D, N-(2-Hydroxypropyl)methacrylamide polymer, aminocaproate and tyrosine-modified
RL: BPR (Biological process); RCT (Reactant); BIOL (Biological study); PROC (Process)
(model; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 366-74-5 2566-23-6, N-Benzoyltyrosine 5354-94-9, N-Benzoylhistidine
RL: RCT (Reactant)
(model; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 9004-07-3, .alpha.-Chymotrypsin 192696-23-4D, solid support-bound
RL: RCT (Reactant)
(**photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)
IT 146-17-8, Flavin mononucleotide **11121-48-5, Rose bengal**
RL: RCT (Reactant)
(photosensitizer; **photodynamic** crosslinking of macromols.: implications for mechanism of **photodynamic therapy**)

L46 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:215766 HCAPLUS
DOCUMENT NUMBER: 126:196947
TITLE: Modified fluorogenic substrates with enzyme-hydrolyzable quencher group for diagnosis and photodynamic treatment of tumors
INVENTOR(S): Bottiroli, Giovanni; Croce, Anna Cleta; Baglioni, Piero; Monici, Monica
PATENT ASSIGNEE(S): Consiglio Nazionale delle Ricerche, Italy; Bottiroli, Giovanni; Croce, Anna Cleta; Baglioni, Piero; Monici, Monica
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9703697	A2	19970206	WO 1996-EP3201	19960719
WO 9703697	A3	19970410		

W: AL, AM, AU, AZ, BB, BG, BR, BY, CA, CN, CZ, EE, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ

RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

CA 2227212	AA	19970206	CA 1996-2227212	19960719
AU 9667351	A1	19970218	AU 1996-67351	19960719
EP 839051	A1	19980506	EP 1996-927559	19960719

R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE, IE

PRIORITY APPLN. INFO.: IT 1995-MI1560 19950719
WO 1996-EP3201 19960719

AB Fluorogenic substrates susceptible of fluorescence emission and photosensitization by enzyme transformation suitable for diagnosis and photodynamic treatment of tumors are provided which consist of fluorescent substances with photosensitization activity, chem. modified with a group quenching the fluorescence and photosensitization properties, the said quencher group being removable by the cell enzyme activity with restoration of the properties of fluorescence and photosensitization activity of the original substance. Prepn. and testing of rose Bengal acetate rs included.

IC ICM A61K041-00
ICS A61K049-00

CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 27

ST fluorogenic substrate diagnosis **photodynamic therapy** cancer; **Rose Bengal** acetate prepn **photodynamic therapy**; quencher group fluorogenic substrate **photodynamic therapy**

IT Antitumor agents
Drug delivery systems
Fluorescence quenching
Fluorescent substances
Photodynamic therapy
Photosensitizers (pharmaceutical)
Tumors (animal)
(modified fluorogenic substrates with enzyme-hydrolyzable quencher group for diagnosis and **photodynamic** treatment of tumors)

IT 108-24-7, Acetic anhydride **11121-48-5, Rose Bengal**
RL: RCT (Reactant)
(modified fluorogenic substrates with enzyme-hydrolyzable quencher group for diagnosis and photodynamic treatment of tumors, and **Rose Bengal** acetate prepn.)

L46 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1997:43829 HCAPLUS
DOCUMENT NUMBER: 126:154514
TITLE: Differential response of photosensitized young and old

human erythrocytes to photodynamic activation
AUTHOR(S): Rollan, A.; McHale, A. P.
CORPORATE SOURCE: Biotechnology Research Group, School of Applied Biological and Chemical Sciences, University of Ulster, Coleraine Co. Londonderry, BT52 1SA, UK
SOURCE: Cancer Lett. (Shannon, Irel.) (1996), Volume Date 1997, 111(1,2), 207-213
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB It has recently been proposed that photosensitized erythrocytes may play an important role in the delivery and targeting of agents such as photosensitizers and chemotherapeutics for use in cancer treatment. It has been suggested that loading of photosensitized erythrocytes with chemotherapeutic agents would provide an ideal means of combining both treatment modalities. The recent application of real-time confocal laser scanning microscopy to the study of immediate effects of photodynamic activation on photosensitized erythrocytes has enabled us, in this study, to distinguish between the differential susceptibility of age-d. resolved sub-populations of human erythrocytes to photodynamic activation. In this study we demonstrate that younger (low age-d.) sub-populations of photosensitized erythrocytes are less susceptible than older (high age-d.) sub-populations to photodynamic activation. We also demonstrate that this phenomenon is exhibited by cells photosensitized using hematoporphyrin deriv. and rose bengal as photosensitizers. In both cases no significant difference in uptake of photosensitizer by both populations could be obsd. using absorbance spectrophotometry. The study suggests that age-d. resoln. of erythrocytes prior to loading and photosensitization might provide a means of enhancing the release of loaded components from the photosensitized system and this would, in turn, enhance the potential use of photosensitized erythrocytes as delivery or targeting systems for use in combination cancer therapies.
CC 8-9 (Radiation Biochemistry)
IT Cell aging
Erythrocyte
Photodynamic therapy
Photosensitizers (biological)
(differential response of photosensitized young and old human erythrocytes to **photodynamic** activation)
IT Laser radiation
(differential response of photosensitized young and old human erythrocytes to photodynamic activation with HPD or **rose bengal** and laser radiation)
IT Proteins (general), biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(release; protein release from photosensitized young and old human erythrocytes: effect of photodynamic activation with HPD or **rose bengal** and laser radiation)
IT **11121-48-5, Rose bengal** 68335-15-9, HPD
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photosensitizer; differential response of photosensitized young and

old human erythrocytes to photodynamic activation with HPD or **rose bengal** and laser radiation)

L46 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1996:418984 HCAPLUS
DOCUMENT NUMBER: 125:109073
TITLE: A new approach for selective targeting in **photodynamic therapy**
AUTHOR(S): Pratesi, R.; Croce, A. C.; Balzarini, P.; Bottiroli, G.; Baglioni, P.; Lo Nostro, P.; Monici, M.
CORPORATE SOURCE: CNR, Universita; Area diella Ricerca di Firenze, Florence, 50127, Italy
SOURCE: Laser Spectrosc., Int. Conf., 12th (1996), Meeting Date 1995, 427-429. Editor(s): Inguscio, Massimo; Allegrini, Maria; Sasso, Antonio. World Scientific: Singapore, Singapore.
CODEN: 63AIAJ
DOCUMENT TYPE: Conference
LANGUAGE: English
AB A new approach for photodynamic therapy is proposed that could improve the selective targeting of tumor cells by exploiting the biol. properties that differentiate abnormal from normal cells. Rose Bengal, a photosensitizing xanthene deriv., has been submitted to chem. modification resulting in the loss of both fluorescence and photodynamic properties. The quencher group is recognized and splitted by cell enzymes, so that, upon internalization, the native structure of the photosensitizer can be restored. Results obtained on cell cultures indicated that a larger accumulation of photosensitizer can be attained when the cells are treated with modified than unmodified drug. Provided that the quencher group is selected according to the metabolic properties of the tumor cells, the use of a modified drug takes advantage of the difference in the metabolic state between normal and neoplastic cells favoring the conversion from inactive to active photosensitizer, thus resulting in a larger accumulation of photosensitizer in tumor than in normal tissue and in a improvement of PDT efficacy.
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 14
ST **rose bengal photodynamic therapy** tumor
IT Photosensitizers
(new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)
IT Neoplasm inhibitors
(photosensitizing; new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)
IT Neoplasm inhibitors
(glioma, photosensitizing; new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)

IT Neuroglia
(neoplasm, inhibitors, photosensitizing; new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)
IT **Photodynamic** action
(**therapeutic**, new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)
IT **11121-48-5, Rose bengal**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(new approach for selective tumor targeting in **photodynamic therapy** with **rose bengal**)

L46 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 1999 ACS
ACCESSION NUMBER: 1990:51383 HCAPLUS
DOCUMENT NUMBER: 112:51383
TITLE: Partition of **Rose Bengal** anion from aqueous medium into a lipophilic environment in the cell envelope of Salmonella typhimurium: implications for cell-type targeting in **photodynamic therapy**
AUTHOR(S): Dahl, Thomas A.; Valdes-Aguilera, Oscar; Midden, W. Robert; Neckers, D. C.
CORPORATE SOURCE: Cent. Photochem. Sci., Bowling Green State Univ., Bowling Green, OH, 43403, USA
SOURCE: J. Photochem. Photobiol., B (1989), 4(2), 171-84
CODEN: JPPBEG; ISSN: 1011-1344
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Photodynamic therapy employs photosensitizers for the selective destruction of tumor tissue while sparing the surrounding healthy tissue. Photosensitization may also be applied to the selective eradication of microorganisms. Photosensitized inactivation requires that the sensitizer bind to the target and therefore the factors that det. photosensitizer binding are crit. to photosensitization selectivity. This paper reports the detn. of some features of the binding site of the potent photosensitizer, Rose Bengal, in Salmonella bacteria and describes some of the factors that affect this binding. The shift in the wavelength of max. fluorescence and expts. with the fluorescence quencher TNBS indicate that Rose Bengal is located in a nonaq. compartment such as the outer membrane.
The dye does not seem to accumulate inside the cell, but rather to accumulate in the outer membrane. Time-dependent changes in sensitizer localization in 2 strains of S. typhimurium that differ in cell wall formation, LT-2 and TA1975, correspond to their differences in susceptibility to photosensitized killing. Therefore, these results provide clues to the factors that det. photosensitization selectivity. Understanding this phenomenon is essential for the efficient design of selective photosensitizers and for optimizing antitumor and antiviral photodynamic therapy.
CC 8-9 (Radiation Biochemistry)
ST **rose bengal** binding cell envelope Salmonella; **photodynamic therapy rose bengal**

binding Salmonella
IT **Photodynamic** action
(of **rose bengal, therapy** with, **rose bengal** binding by cell envelope of Salmonella typhimurium in relation to)
IT Salmonella typhimurium
(**rose bengal** binding by cell envelope of, **photodynamic therapy** in relation to)
IT Cell wall
(outer membrane, **rose bengal** binding by, of Salmonella typhimurium, **photodynamic therapy** in relation to)
IT **11121-48-5, Rose bengal**
RL: BIOL (Biological study)
(binding of, by cell envelope of Salmonella typhimurium, **photodynamic therapy** in relation to)